pages 32-41 for HUMIDITY ALERT RANGE CHANGES

ENVIROALERT EA200
ENVIROALERT EA400

Installation / Owner's Manual

Electronic Multi-Zone Environmental Alarm System

Limitations of the Alarm System or Device

While your alarm system or device is reliable and sophisticated, it does not offer guaranteed protection against burglary, fire, or other emergency. Any security product, whether commercial or residential, is subject to compromise or failure-to-warn for a variety of reasons. These include:

- Individuals may gain access through unprotected openings or have the technical sophistication to bypass an alarm sensor or disconnect an alarm warning device.
- Monitoring devices will not operate without power. Devices powered by AC will not work if their AC power supply is off for any reason. If the system has battery back-up, batteries that are not maintained can fail to provide the necessary power for devices to function properly.
- Alarm warning devices such as sirens, bells, and horns may not alert people or wake up sleepers if they are located on the other side of closed or partly closed doors. If warning devices are on a different level of the residence from the bedrooms, they are less likely to waken or alert people inside the bedrooms.
- Telephone lines needed to transmit alarm signals from the premises to a central monitoring station may be out of service and are subject to compromise by sophisticated means of attack.
- Signals sent by wireless transmitters may be blocked or reflected by metal before they reach the alarm receiver. Even if the signal path has been recently checked during a weekly test, blockage can occur if a metal object if moved into the path.
- Even if the system responds to the emergency as intended and is a monitored alarm system, the authorities may not respond appropriately.
- This equipment, like other electrical devices, is subject to component failure. Even though this equipment is designed to last as long as 20 years, the electronic components could fail at any time.
- The most common cause of an alarm system not functioning properly is due to inadequate maintenance. Your alarm system should be tested weekly to make sure all detection devices are operating properly. Your control panel and keypads should be tested, as well.

Installing an alarm system may make you eligible for lower insurance rates, but an alarm system is not a substitute for insurance. Homeowners, property owners, and renters should continue to insure their lives and property.

Table of Contents

General Information 3
- EnviroAlert EA200 5
- EnviroAlert EA400 7
- Symbols on the Product or Manual Labeling 9
- Display and Icons 10
- Keys 15

Installation 18
- Tools and Supplies Required 18
- Power Supply Requirements 18
- Selecting Mounting Location for EA200 / EA400 19
- Mounting the EA200 / EA400 19
- Connecting the EA200 / EA400 21

Setup 32
- Power-up and Unlocking for Programming 32
- Setting Time and Date 33
- Programming the Zones 34
- Offset Adjustment 38
- Changing Programming for a Previously Programmed Zone 39
- Locking the Program Settings 39

Using the EA200 / EA400 to Monitor Environmental Conditions 39
Normal (Non-Alarm) Mode Display 40
Alarm Mode Displays 40
Viewing Alarm History 41
Troubleshooting 42
Accessories 44
Specifications 47
Warranty and Service Information 51
WEEE Product Recovery/Recycling for EU Customers 52
EnviroAlert Certification Info 52

General Information

The EnviroAlert® EA200 and EA400 provide alarm signals when monitored conditions exceed the user-programmable HIGH LIMIT or LOW LIMIT set points. The alarm signals are provided via relay outputs that can operate with alarm panels, process controls, security systems, or other similar automated equipment.

All setup is done using the front panel keys and the LCD display, which uses icons that indicate the setup and parameter being configured. The LCD display assists the user during setup, and shows measured conditions for the monitored critical environment.

The EA200 and EA400 can monitor multiple critical environments using multiple sensor inputs, with each sensor input/alarm channel designated as a “Zone”. The EA200 and EA400 differ primarily in the number of Zones that can monitored.

Using the appropriate accessory sensors (not supplied), the EA200 / EA400 monitors and provides alarms for the following environmental conditions:

- Temperature: from –50° C to 150° C (–58° F to 299° F)
- Humidity: from 5% to 95% RH
- Presence of water

The EA200 / EA400 is easily mounted directly to a 2-gang electrical enclosure, or to walls.

Figure 1. EnviroAlert EA200 and EA400

EnviroAlert EA200

Figure 2 shows a simplified functional diagram of the EA200 interfaces and functions. The EA200 provides two Zones of monitoring as follows:

- **Zone 1** – Zone 1 is permanently programmed as a temperature monitor using a temperature sensor built-in to the EA200.
- **Zone 2** – Zone 2 is equipped with a sensor input connector that can be connected to any one of a variety of sensors. Using the appropriate sensor, Zone 2 can be used to monitor temperature, humidity, or presence of water at remote locations.

Each Zone has its own Form C relay output that activates when a monitored environmental condition exceeds the programmed range. An AUX (Auxiliary) Output relay is activated whenever any Zone is in alarm. It can be used to provide a single output to the alarm panel or to an optional audible alarm.

EA200 Simplified Functional Diagram

Zone Control

The **Zone 1** internal temperature sensor can be programmed for HIGH and LOW alarm limits in °F or °C. Defrost delay and an offset of temperature measured can also be applied.

The **Zone 2** channel can be programmed for temperature usage similar to Zone 1, or for humidity HIGH/LOW monitoring/alarm or water detection.

Programming and usage of the two Zones are fully independent of each other.

Zone Alarm Outputs

A Form C relay output activates when the programmed alarm limits of its corresponding Zone are exceeded.

An Aux Output SPST relay output activates when any combination of one or more individual Zone alarms occur.

Sensor Inputs

An internal temperature sensor is monitored via **Zone 1**.
An external (remote) sensor can be added and is monitored via **Zone 2**. The external sensor can be any of the types shown below. Zone 2 is then programmed according to the type of sensor used.

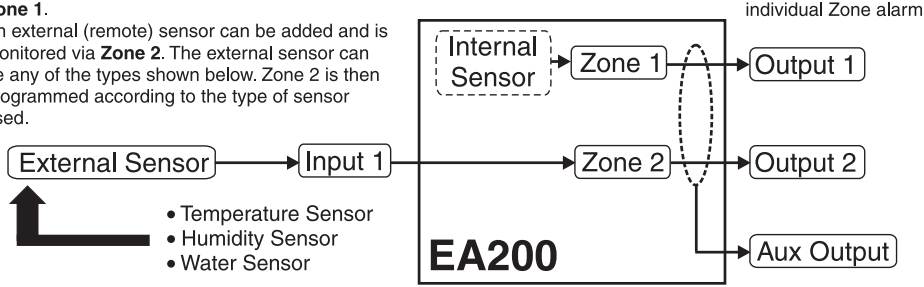


Figure 2. EA200 Functional Diagram

EnviroAlert EA400

Figure 3 shows a simplified functional diagram of the EA400 interfaces and functions. The EA400 provides four Zones of monitoring as follows:

- **Zones 1 through 4** – Each Zone is equipped with a sensor input connector that can be connected to any one of a variety of sensors (the EA400 is not equipped with a built-in sensor). Using the appropriate external sensor, each Zone can be used to monitor temperature, humidity, or presence of water. Programming and usage of each Zone is fully independent of each other.

Each Zone has its own Form C relay output that activates when a monitored environmental condition exceeds the programmed range. An AUX (Auxiliary) Output relay is activated whenever any Zone is in alarm. It can be used to provide a single output to the alarm panel or to an optional audible alarm.

EA400 Simplified Functional Diagram

Zone Control

For temperature monitoring, each Zone can be programmed for HIGH and LOW alarm limits in °F or °C. Defrost delay and an offset of temperature measured can also be applied.

Zone channels can be programmed for temperature usage, or for humidity HIGH/LOW monitoring/ alarm or water detection.

Programming and usage of each Zone is fully independent of each other Zone.

Zone Alarm Outputs

A Form C relay output activates when the programmed limits of its corresponding Zone are exceeded.

An Aux Output SPST relay output activates when any combination of one or more individual Zone alarms occur.

Sensor Inputs

External sensors for **Zone1** through **Zone 4** can be any of the types shown below. Each Zone is then programmed according to the type of sensor used.

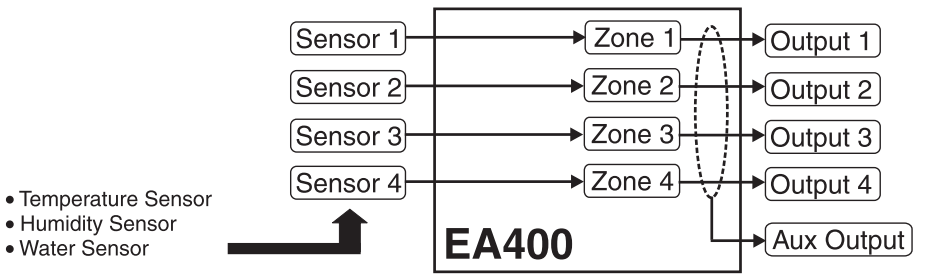


Figure 3. EA400 Functional Diagram

Symbols on the Product or Manual Labeling

Symbols on Product or Manual

Symbol	Definition
	Attention, consult accompanying documents or statements.
	For product disposal, ensure the following: • Do not dispose of this product as unsorted municipal waste. • Collect this product separately. • Use collection and return systems available to you.
NO / NC / C	Normally Open, Normally Closed, and Common relay contact terminals
AUX	Form C relay output that activates upon an alarm from any of the zones.
WEEE	Waste Electrical and Electronic Equipment
RoHS	Restriction of Hazardous Substances
	Products intended for sale within the European Union are marked with the CE Mark, which indicates compliance to applicable Directives and European Norms (EN).
	The TUV certification combines electrical safety certification for Canada (SCC), United States (NRTL), and Europe (EU Directives). These products were voluntarily tested according to the relevant safety requirements and mentioned properties pertaining to this certification mark.
	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.

Display and Icons

Figure 4 shows and describes the display formats and icons.

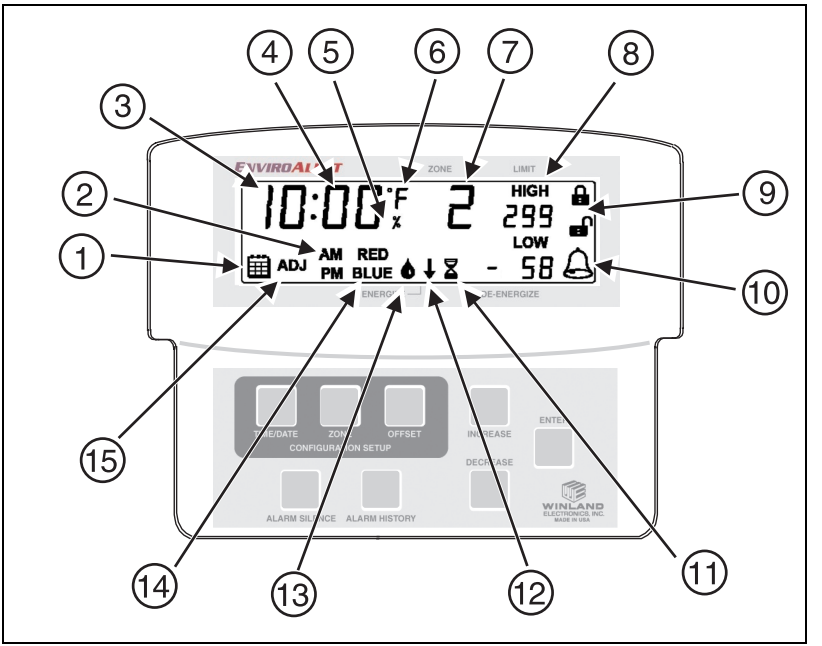


Figure 4. EA200 / EA400 Display and Icons

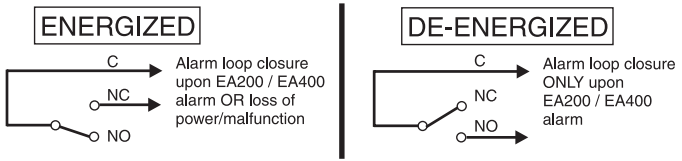
Display Icons

Index No.	Icon	Function
1		**Date** icon. Indicates EA200 / EA400 Date Set mode is accessed.
2	AM PM	**Time Set** display. Indicates Time Set mode is accessed.
3	10:00	**Time/Date/Year** display. During setup, multiple function display for setting year (4-digit), date (month.day), and time (hours:minutes).
4	00	**Temperature/Humidity** display. Displays temperature and humidity values for designated Zone.
5	%	**Humidity Mode** icon. Indicates Zone is programmed for monitoring humidity.
6	°F °C	**Temperature** icon. Indicates Zone is programmed for monitoring temperature. **°F** or **°C** indicates measurement units selection. Running display also shows monitored temperature for Zones programmed for temperature monitoring.
7	2	**Zone** display. During programming, indicates the Zone being programmed. Display represents active data for Zone indicated.

Display Icons — continued

Index No.	Icon	Function
8	HIGH 299 LOW - 58	**Limit** display. Shows the programmed HIGH limit and LOW limit points where measured conditions exceeding limits will trigger an alarm for the related Zone. • When programmed for **temperature**, the limit range allowed is between 299 degree units to –58 degree units. • When programmed for **humidity**, the limit range allowed is between 100 RH% units to 0 RH% units.
9		**Locked** and **Unlocked** icons. Indicates EA200 / EA400 lock status. When EA200 / EA400 is in **locked** mode, programming cannot be changed; no configuration modes are accessible.
10		**Alarm** icon. When flashing, indicates that a Zone is in an alarm state. When steadily illuminated, indicates that an alarm condition exists, but the programmed time delay interval has not yet elapsed. When time delay period elapses, the icon will begin flashing.
11		**Delay Time Entry Mode** icon. During programming, indicates selection of delay time mode (up to 120 minutes delay can be entered). When icon appears, a delay time (in minutes) can be entered. With a delay programmed for the Zone, conditions exceeding the programmed limits (such as during a defrost cycle) are ignored for the duration of the programmed delay. This function is typically used to prevent false alarms for freezers and coolers that have defrost cycles or doors that are opened frequently.

Display Icons — continued

Index No.	Icon	Function
12	⬇	**Alarm Output Relay Mode** icon. During programming, indicates selection of energized or de-energized alarm output relay state for the Zone being programmed. • Down arrow points to ENERGIZE when energized relay mode is selected (relay is energized with no alarms; relay de-energizes upon alarm). • Down arrow points to DE-ENERGIZE when de-energized relay mode is selected (relay is de-energized with no alarms; relay energizes upon alarm). 
13	💧	**Water Presence Mode** icon. Indicates Zone is programmed for detecting presence of water.

Display Icons — continued

Index No.	Icon	Function
14	RED BLUE	**Temperature Sensor Type** display. During temperature monitoring programming, sensor type (based on conditions expected for Zone) is entered. • RED is selected when a “Red” (high-temperature range) sensor is to be used. • BLUE is selected when a “Blue” (low-temperature range) sensor is to be used. ***Note***: See “Accessories” on page 44 for more information regarding sensor types and appropriate usage.
15	ADJ	**Offset Adjust** icon. Indicates that OFFSET (± 9 units) has been selected (this is selected by pressing the OFFSET key). If desired, offset allows the temperature or humidity reading for the selected Zone to be offset by a value that aligns the reading displayed on the EA200 / EA400 with that of existing equipment, thereby correlating the EA200 / EA400 reading with that of existing equipment.

Keys

Figure 5 shows and describes the entry keys.

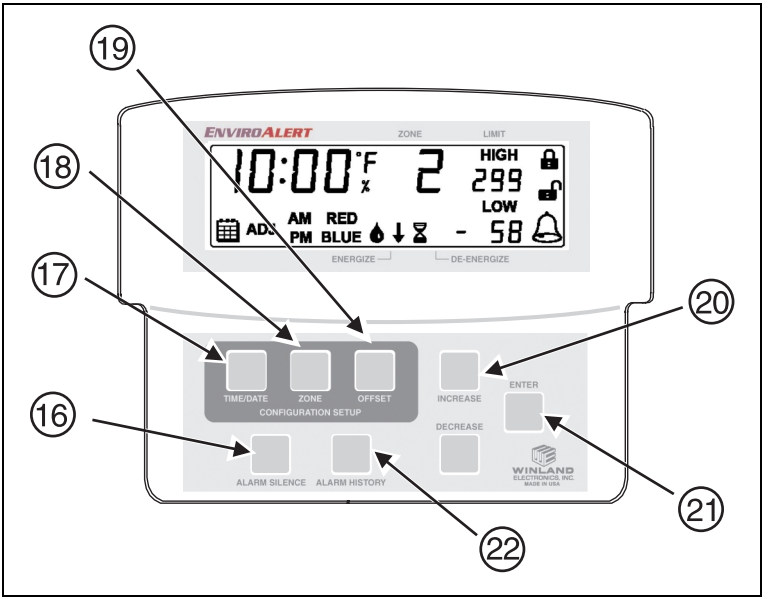


Figure 5. EA200 / EA400 Keys

Entry Keys

Index No.	Key	Function
16	ALARM SILENCE key	Multi-function key: • If alarm occurs, pressing key interrupts the auxiliary output relay for 10 minutes. • Pressing key along with ENTER key toggles EA200 / EA400 between Locked and Unlocked modes.
17	TIME/DATE key	When pressed in Unlocked mode, accesses Time/Date set mode. When pressed again, exits mode.
18	ZONE key	• When pressed in Unlocked mode during programming, allows access to Zone programming. • When pressed during normal operation, allows selection of the Zone to be displayed. When pressed again, exits mode.
19	OFFSET key	When pressed, allows offset entry for Zone displayed. (See Offset Adjust icon (Index 13) in Display Icons table for more information.)

Entry Keys — continued

Index No.	Key	Function
20	INCREASE DECREASE keys	Select programming mode or value by pressing INCREASE or DECREASE key to: • Scroll through available selections pertaining to a mode. • Increase or decrease numeric value pertaining to a mode (for example, selection of temperature HIGH and LOW limits). • Toggle between Zones in Programming mode. Zone selected using these keys will display values for 10 seconds. ***Note***: Holding the INCREASE or DECREASE key automatically scrolls through the full range of numeric values or mode choices.
21	ENTER key	When pressed, saves a mode selection or numeric value entry. After pressing ENTER within a programming sequence, the EA200 / EA400 proceeds to the next item requiring programming.
22	ALARM HISTORY key	When pressed, the EA200 / EA400 displays history relating to alarms. If multiple alarms exist, pressing the INCREASE or DECREASE key steps through all stored alarms. Press and hold ALARM HISTORY key for 5 seconds to clear alarm history.

Installation

Tools and Supplies Required

Below is a list of typically required tools and supplies:

- #2 Flat-Blade Screwdriver
- Sensors (not supplied; see “Accessories” on page 44)
- Sensor Wiring (typically 18-22 AWG twisted-pair; not supplied)
- Alarm Wiring (typically 18-22 AWG; see EA200 / EA400 Output (Alarm) Connections)

Power Supply Requirements

Power source must furnish REGULATED 11 to 14VDC (EA200-12 and EA400-12) or 23 to 26VDC (EA200-24 and EA400-24). Power can be supplied using a REGULATED AC/DC adapter (not supplied; see “Accessories” on page 44), or connect directly to a REGULATED DC power supply from an alarm panel.

Note: Where required, this equipment is to be isolated from the mains supply by a limited power source as specified in EN60950.

Note: All terminals must be connected to a Class 2 Power Limited Circuit complying with the National Electric Code NFPA 70, Article 725.

Note: See “Specifications” on page 47 for power supply requirements.

Selecting Mounting Location for EA200 / EA400

Select a mounting location for the EA200 / EA400 considering the following:

- Install the EA200 / EA400 where authorized personnel can readily access the device. If required, consideration should be made regarding a location that discourages unauthorized access.
- Install the EA200 / EA400 such that the maximum cabling distance between the sensor and the EA200 / EA400 does not exceed 304 m (1000 ft.).
- Install the EA200 / EA400 in a location that meets the operating environmental conditions (see “Specifications” on page 47). Additionally, if Zone 1 (built-in temperature sensor) of an EA200 is being used, the EA200 must be installed in the environment for which it is intended to monitor.
- RF interference will have an adverse effect on the operation of the EnviroAlert. Do NOT place the unit, wiring, or sensors near a potential source of interference.

⚠ ***CAUTION:*** **Do not install the EA200 or EA400 in coolers or freezers.**

Mounting the EA200 / EA400

The EA200 / EA400 uses a removable rear mounting plate which is attached to a mounting surface (either a 2-gang electrical enclosure or surface mount).

1. Remove the rear mounting plate from the EA200 / EA400 main chassis as follows:

- At bottom of EA200 / EA400, pull the rear mounting plate down and away from the EA200 / EA400 main chassis. The retainer tabs on the main chassis will disengage from the holes in the rear mounting plate.
- Completely remove the mounting plate from the EA200 / EA400 main chassis by disengaging the mounting plate upper hinges from the mating tabs on the EA200 / EA400 main chassis.

2. Mount the mounting plate as follows:

- **Mounting to 2-gang enclosure:**
  Use four (4) machine screws to secure the mounting plate to the mating holes in the 2-gang enclosure.
- **Mounting to drywall surface:**
  Place the mounting plate in mounting position. Mark the four mounting hole locations. Install drywall anchors and secure the mounting plate to anchors.

Note: Where mounted to wall, a wiring access hole should be prepared at this time. All wiring must pass through the opening in the center of mounting plate.

Connecting the EA200 / EA400

Note: Make certain all wiring to be connected is passing through the opening in center of mounting plate.

Note: All terminals must be connected to a Class 2 Power Limited Circuit complying with the National Electric Code NFPA 70, Article 725.

Note: Where required, this equipment is to be isolated from the mains supply by a limited power source as specified in EN60950.

EA200 / EA400 Connectors

Figure 6 shows and describes the functions of the EA200 / EA400 connectors.

Note: All connections to the EA200 / EA400 circuit board header connectors are made using Terminal Block Adapters (supplied with the EA200 / EA400 and with sensors; and available as an accessory item). To ease connection of stripped wire ends to the adapters, the adapters can be removed from the circuit board header connectors. Connect stripped wire ends to the adapters as follows:

- Remove the adapter from the circuit board by pulling the adapter up and off of the circuit board header connector.
- Insert stripped wire ends into side of adapter. Secure the connections using the set screws on the adapter. Check the connection by lightly pulling on each connection.
- After connecting the wire ends to the adapter, align the adapter to the header pins where connection is desired, and press the adapter fully onto the header connector pins.

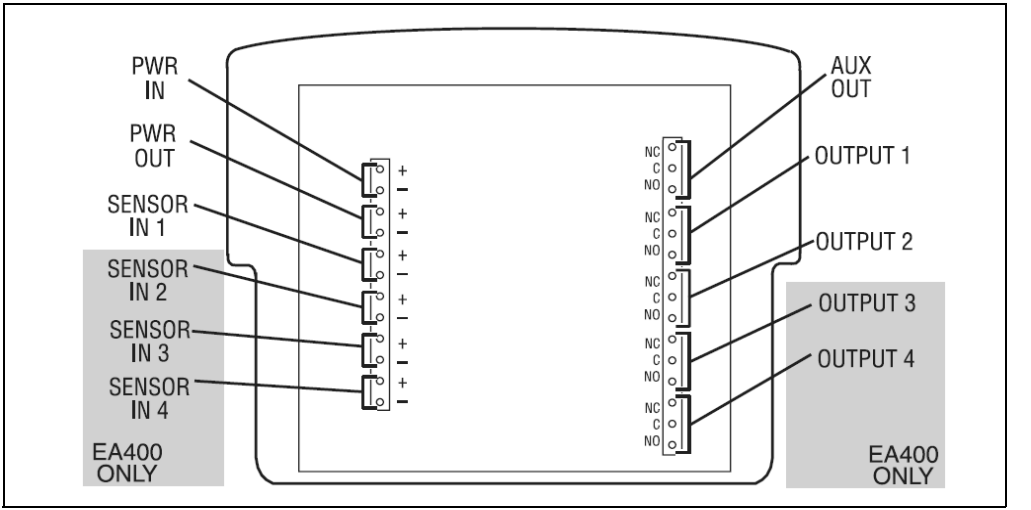


Figure 6. EA200 / EA400 Connectors

EA200 / EA400 Connectors

Connector	Function
PWR IN	Provides power connection for unit. Be sure to observe proper voltage requirements for both 12V and 24V models. ⚠ ***CAUTION:*** **Observe (+) and (-) polarity markings screened on circuit board. EA200 / EA400 can be damaged if power polarity is reversed.**
PWR OUT	Provides power to accessories used with the EA200 / EA400 (such as HA-III Humid Alert, PN 1128). ⚠ ***CAUTION:*** **Only connect accessories specified in this manual to the PWR OUT connection. Connection of unsuitable loads to this connection may damage the power supply and EA200 / EA400, or result in improper or unreliable operation.**
⚠ ***CAUTION:*** **Only connect sensors specified in this manual to the SENSOR IN 1 through SENSOR IN 4 connections. Unverified sensors may damage EA200 / EA400, or result in improper or unreliable operation.**	
SENSOR IN 1	**EA200:** Input for **Zone 2** external temperature, water, or humidity sensor.
	EA400: Input for **Zone 1** external temperature, water, or humidity sensor.
SENSOR IN 2	**EA200:** Not available (blank position).
	EA400: Input for **Zone 2** external temperature, water, or humidity sensor.

SENSOR IN 3	**EA200:** Not available (blank position).
	EA400: Input for **Zone 3** external temperature, water, or humidity sensor.
SENSOR IN 4	**EA200:** Not available (blank position).
	EA400: Input for **Zone 4** external temperature, water, or humidity sensor.
⚠ ***WARNING:*** **EA200 / EA400 relay outputs are intended only for use as low-voltage, low-current alarm connections, and not for direct switching or control of AC-mains powered loads. Additionally, local codes may further dictate or limit the types of loads and associated wiring to be used with the low-current Form C relay outputs used with the EA200 / EA400. Connecting AC-mains type circuits to the EA200 / EA400 may result in an electric shock and/or fire hazard.** ⚠ ***CAUTION:*** **Do not connect a load to the AUX OUT or OUTPUT 1 through OUTPUT 4 relay outputs that exceeds limitations stated in the Specifications section of this manual. Loads exceeding the specified limitations may damage EA200 / EA400, or result in improper or unreliable operation.**	
AUX OUT	Form C relay output that activates upon any alarm. Allows for a single output to an alarm panel. This relay cannot be configured for energized or de-energized.
OUTPUT 1	**EA200:** Form C relay alarm output for built-in sensor (**Zone 1**).
	EA400: Form C relay alarm output for **Zone 1**.
OUTPUT 2	**EA200:** Form C relay alarm output for external sensor (**Zone 2**).
	EA400: Form C relay alarm output for **Zone 2**.

EA200 / EA400 Connectors — continued

OUTPUT 3	**EA200:** Not available (blank position).
	EA400: Form C relay alarm output for **Zone 3**.
OUTPUT 4	**EA200:** Not available (blank position).
	EA400: Form C relay alarm output for **Zone 4**.

EA200 / EA400 Power Connections

⚠ ***CAUTION:*** **Do not connect or disconnect power, sensor, or alarm wiring with power applied. Connecting and disconnecting EA200 / EA400 with power connected may damage EA200 / EA400, or result in improper or unreliable operation.**

1. Using a Terminal Block Adapter, connect power supply + and – leads to PWR IN (+) and (–) on EA200 / EA400 circuit board header connector. Observe proper polarity. Make sure to use a REGULATED power supply.

2. If PWR OUT (supplied from EA200 / EA400 circuit board) is to be used, connect + and – leads to PWR OUT (+) and (–) on EA200 / EA400 circuit board header connector using a Terminal Block Adapter.

⚠ ***CAUTION:*** **Only connect accessories specified in this manual to the PWR OUT connection. Connection of unsuitable loads to this connection may damage the power supply and EA200 / EA400, or result in improper or unreliable operation.**

EA200 / EA400 Sensor Connections

Note: Sensors required should be on-hand before attempting installation. Refer to “Accessories” on page 44 for information regarding available sensors and their recommended applications.

Note: The EA200 / EA400 can be used with earlier-version Winland temperature sensors (Part Numbers 1106, 1107, 1108, 1109, 1109A). However, for new installations it is recommended that the current Winland temperature sensors be used. See “Accessories” on page 44 for descriptions and part numbers of current Winland sensors.

1. Install and wire all required external (remote location) sensors between the sensor and the EA200 / EA400 mounting location. Use a wiring scheme that identifies sensor wiring polarity. (The M-001-0081, M-001-0082, M-001-0086, and M-001-0087 thermistor temperature sensors are not polarity-sensitive.)

2. Determine the sensor-to-Zone allotment to be used with the EA200 or EA400 being installed. The table below shows the lists the Zones for the EA200 and EA400.

3. Using the Terminal Block Adapter included with the sensor, connect the sensor wires to the appropriate SENSOR IN (+) and (–) connector on EA200 / EA400 circuit board header connector as shown in Figure 7. Where applicable, observe proper polarity.

4. Repeat the above step for each sensor.

Zone	Sensor IN		Corresponding Alarm Outputs	
	EA200	EA400	EA200	EA400
1	no external connection (built-in temp. Zone)	SENSOR IN 1 (+) (–)	OUTPUT 1 NC C NO	OUTPUT 1 NC C NO
2	SENSOR IN 1 (+) (–)	SENSOR IN 2 (+) (–)	OUTPUT 2 NC C NO	OUTPUT 2 NC C NO
3	not available	SENSOR IN 3 (+) (–)	not available	OUTPUT 3 NC C NO
4	not available	SENSOR IN 4 (+) (–)	not available	OUTPUT 4 NC C NO

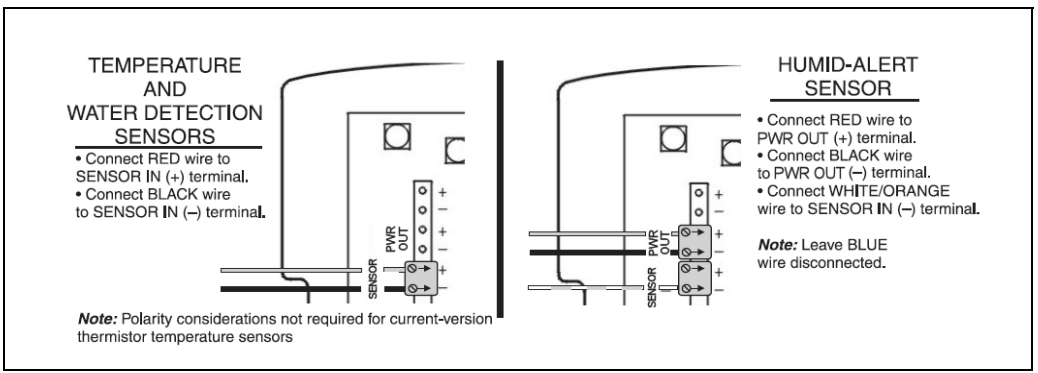


Figure 7. EA200 / EA400 Sensor Connections

EA200 / EA400 Output (Alarm) Connections

1. For all alarm loops to be controlled by the EA200 / EA400, install all required wiring from alarm loops to the EA200 / EA400 mounting location.

2. Determine the alarm-to-Zone allotment to be used with the EA200 or EA400 being installed. See the table above in EA200 / EA400 Sensor Connections.

3. Connect the alarm loop leads to the Terminal Block Adapter. Attach the adapter to terminals C and either NC or NO on the appropriate circuit board header connector. See Figures 8 and 9.

   Figures 8 and 9 show typical alarm loop wiring configurations. Figure 8 shows an alarm loop where alarm power is derived from the alarm loop. Figure 9 shows an alarm loop where alarm power is derived from the power supply feeding the EA200 / EA400.

   In both cases, the configuration shown uses the Alarm Output Relay mode set to “DE-ENERGIZED” (alarm sent when relay energizes and closes).

   To configure for ENERGIZED operation, the Zone should be programmed for ENERGIZED, and the NC terminal of the output relay should be used instead of NO.

4. Repeat the above step for each alarm loop.

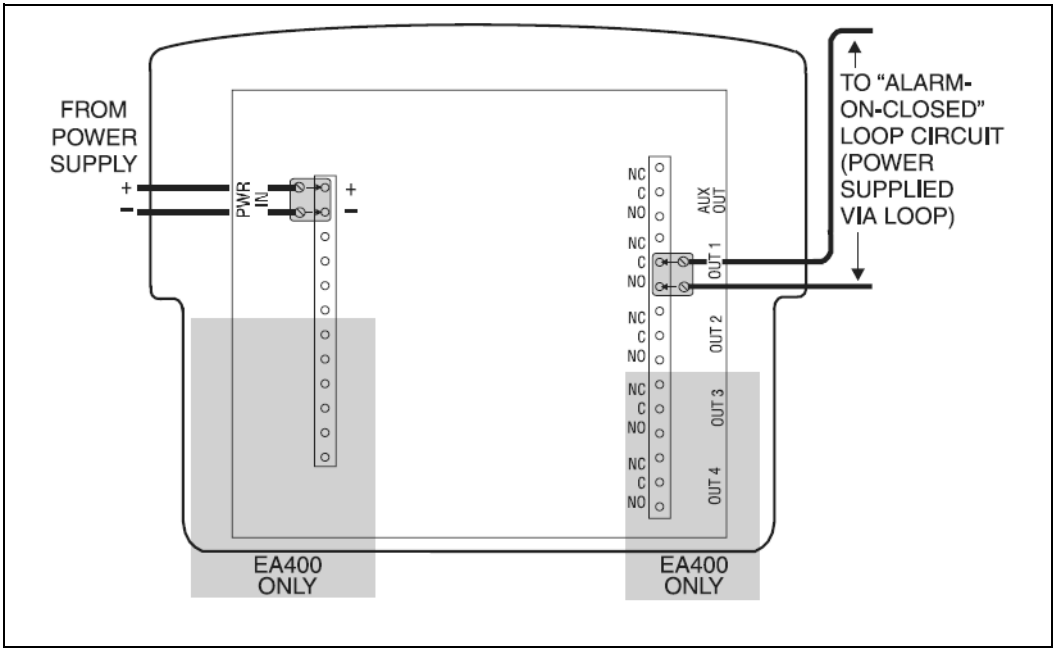


Figure 8. Typical Alarm Loop Wiring Configuration (External Power)

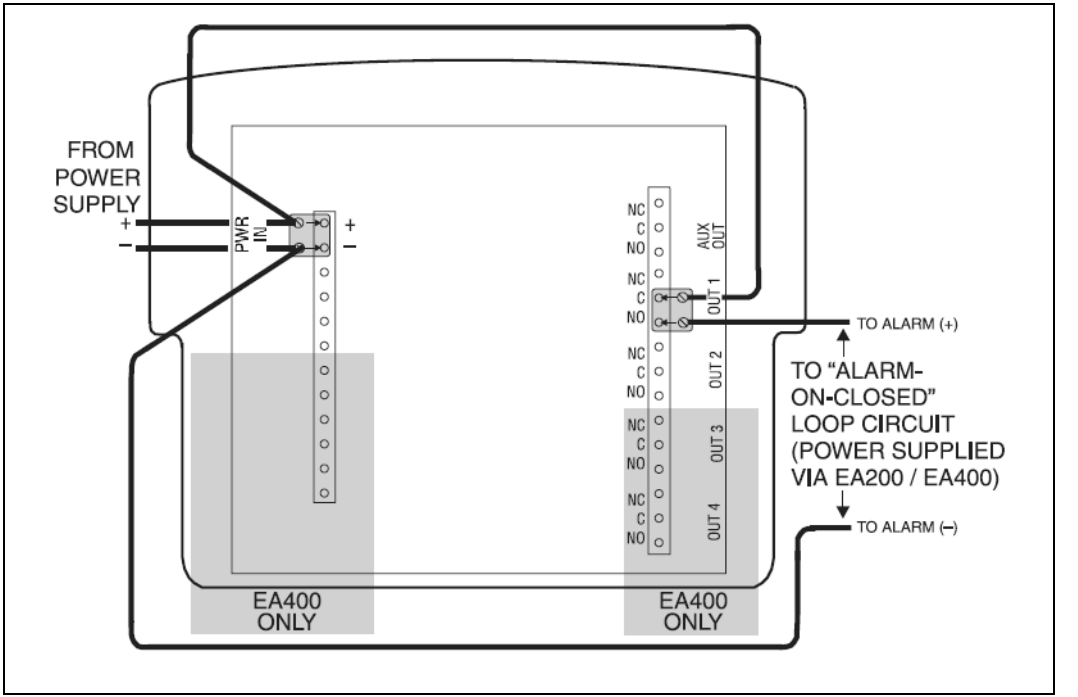


Figure 9. Typical Alarm Loop Wiring Configuration (Self-Powered)

5. Making certain wiring is not pinched or otherwise stressed, re-install the EA200 / EA400 main chassis onto the mounting plate (installed in Mounting the EA200 / EA400) as follows:
    - Engage the mating tabs on the EA200 / EA400 main chassis into the mounting plate upper hinges.
    - Pivot the bottom of the EA200 / EA400 main chassis into closed position while aligning the retainer tabs on the main chassis with the holes in the rear mounting plate. Snap the main chassis closed onto the mounting plate. When properly closed, the main chassis and mounting plate mating surfaces will be flush. Make certain no wiring is protruding between mating surfaces.

6. The AUX output can be connected to either a local buzzer or strobe. It can also be used as a single output to an alarm panel.

Setup

When powered-up, the EA200 / EA400 is ready to step through the stages where programming settings are entered. As an overview, the EA200 / EA400 entry progression is as follows:

- Lock / Unlock
- Date / Time Set
- Program (set up) Zones

Note: Unless otherwise noted, all steps apply equally to EA200 or EA400.

Note: During Setup, a flashing display indicates the EA200 / EA400 is waiting for data to be entered and saved.

Power-up and Unlocking for Programming

1. Apply power to the EA200 / EA400. All segments of the LCD display should momentarily appear. The (Locked) icon appears.

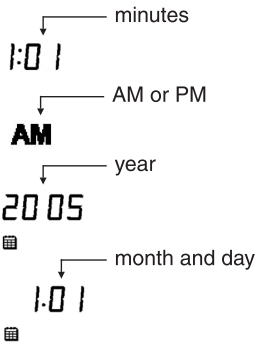
2. Simultaneously press and release the ALARM SILENCE and ENTER keys. The (Unlocked) icon appears.

Setting Time and Date

1. Press the TIME/DATE key. The Hours display appears.

2. Enter current **hour** (flashing) by using the INCREASE or DECREASE keys to scroll to the current hour, then press the ENTER key.

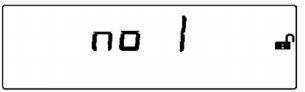
3. Enter the remaining data (in the sequence as shown below) for current date and time by similarly using the INCREASE or DECREASE keys to scroll to the desired setting, and then pressing the ENTER key.



Programming the Zones

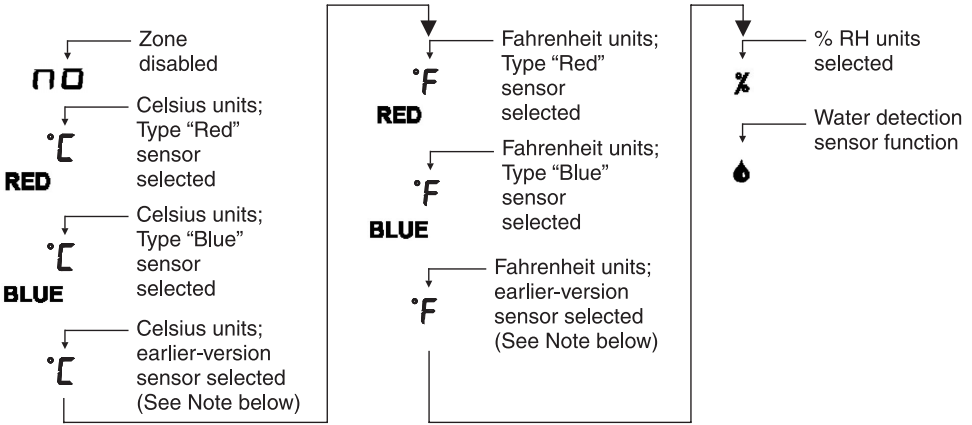
Program each Zone as follows:

1. Press the ZONE key. The Zone display appears.



2. Enter the **Zone** desired to be programmed (flashing) by using the INCREASE or DECREASE keys to scroll to the desired Zone, and then press the ENTER key.

3. Enter the remaining data (from the choices in the sequence shown below) for the Zone being programmed by similarly using the INCREASE or DECREASE keys to scroll to the desired setting, and then pressing the ENTER key.



Note: Sensor types (“Red”, “Blue” or plain °F or °C) refer to the Zone programming required for the type of sensor used:

- **RED** settings are used for current-version thermistor temperature sensor M-001-0081 and M-001-0087.
- **BLUE** settings are used for current-version thermistor temperature sensor M-001-0082 and M-001-0086.
- Plain °F or °C settings are used for installations where earlier-version temperature sensors (Part Numbers 1106, 1107, 1108, 1109, 1109A) are already in place. **For new installations, it is recommended that the RED and BLUE thermistor temperature sensors listed above be used.**

Refer to “Accessories” on page 44 for detailed information, if required.

Note: If a Zone is not to be used, set the Zone to Disabled (nO). If an unconnected Zone is not disabled, nuisance alarms may occur. Proceed to step 1 above to program other Zones.

Note: All sensor selections (other than Disabled) require that the Zone be properly connected to the sensor type entered during programming.

Note: The sequencing shown here assumes using the INCREASE KEY to scroll through the choices. The opposite sequence occurs using the DECREASE key.

4. Depending on the monitoring function selected above, proceed as follows:
   - If **Temperature** function (°) or **Humidity** function (%) was selected, go to step 5.
   - If **Water Detection** function (💧) was selected, go to step 8.
5. When the display shown below appears, enter the **High** limit desired to be programmed (flashing) by using the INCREASE or DECREASE keys to scroll to the desired value, then press the ENTER key.

6. Enter the **Low** limit desired to be programmed (flashing) by using the INCREASE or DECREASE keys to scroll to the desired value, and then press the ENTER key.

7. When the Delay Time (⌛) icon appears, if desired enter a **Delay Time** (in minutes) to be programmed (flashing) by using the INCREASE or DECREASE keys to scroll to the desired value, and then press the ENTER key. (Refer to **Delay Time Entry Mode** icon in Display and Icons for more information about delay function.)

   If delay is not desired, set to “0”, press the ENTER key, and proceed.

8. When the ↓ icon appears, select ENERGIZE or DE-ENERGIZE by using the INCREASE or DECREASE keys to toggle to the desired setting, then press the ENTER key. (Refer to **Alarm Output Relay Mode** icon in Display and Icons for more information about relay modes.)

9. At this point, programming for the Zone is complete. The display now shows the entered limits (if applicable) and settings, along with the current monitored parameter (if applicable).

10. Repeat steps 1 through 9 for other Zones.

Offset Adjustment

If desired, offset allows the temperature or humidity reading for the selected Zone to be offset by a value that correlates the reading displayed on the EA200 / EA400 with that of existing equipment.

Note: Allow a minimum of 15 minutes for temperature being monitored to stabilize before making offset adjustments.

Enter an offset as follows:

1. Press the OFFSET key. The **ADJ** icon appears.

2. The flashing digit indicates the Zone at which the offset is to be applied. Use the INCREASE or DECREASE keys to select the desired Zone, and then press the ENTER key.

3. The flashing digit now indicates the offset value. Use the INCREASE or DECREASE keys to select the desired offset value (±9 units range), and then press the ENTER key.

   The measured value added with the offset value is now displayed. (For example, if a baseline measurement was 77 °F and an offset of –5° F was applied, the EA200 / EA400 would now display 72 °F.)

Changing Programming for a Previously Programmed Zone

A Zone can be re-programmed as desired at any time. Press the ZONE key and perform Zone programming as described in Programming the Zones.

Locking the Program Settings

The EA200 / EA400 can be locked after programming. Lock the EA200 / EA400 as follows:

1. Simultaneously press and release the ALARM SILENCE and ENTER keys. The (Locked) icon appears.
2. If desired, unlock by repeating the above step.

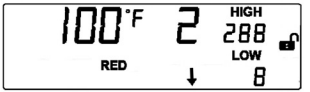
Using the EA200 / EA400 to Monitor Environmental Conditions

When programmed and powered-up, the EA200 / EA400 provides a display of data corresponding to all active Zones (running display). If more than one Zone is active, the display cycles through and pauses on each Zone for approximately 5 seconds.

To immediately access a reading for a Zone, or to go back to a particular Zone, use the INCREASE or DECREASE keys.

Normal (Non-Alarm) Mode Display

An example of a running display for a Zone programmed to monitor temperature is shown below.



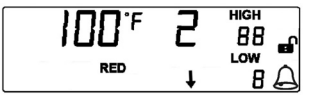
In general, normal non-alarm indication for any mode shows:

- The measured data pertaining to the Zone.
- No flashing data.
- No (Alarm) icon.

Alarm Mode Displays

An example of a **Alarm Display** is shown below.

In the example shown below, the HIGH limit of 88° F has been exceeded by the displayed 100° F ambient reading, thereby resulting in an alarm.



An alarm indication for any mode is shown by:

- Flashing data corresponding to the Zone where the alarm is occurring.
- An (Alarm) icon will flash during an alarm, and is solid if time delay is activated. When time delay expires, icon will flash indicating an output relay has been activated for the Zone in alarm.

To silence the auxiliary for 10 minutes, press the ALARM SILENCE key.

Note: Even if an alarm is silenced, the alarm display for the Zone is still displayed until the alarm condition is corrected.

Note: If an alarm cannot be promptly corrected, and you wish to avoid repeated alarms for the Zone, the Zone should be removed from service by setting the Zone to Disabled (⊓⊡). Refer to Programming the Zones.

Viewing Alarm History

The Alarm History function stores up to 8 alarm events. View the alarm history as follows:

1. Press the ALARM HISTORY key. The display shows the most recent stored alarm alternately toggling between:
    - Time of alarm occurrence, Zone number, and limit exceeded.
    - Date of alarm occurrence, Zone number, and limit exceeded.

2. Press the DECREASE key to go to the next stored alarm. The next alarm is displayed as described in step 1.

3. Press ALARM HISTORY to go back to the normal display.

4. Clear the alarm history by pressing and holding the ALARM HISTORY key until CLr (Clear) is displayed, then release the key.

Troubleshooting

Operating or setup errors are displayed by flashing data on the display. Often, a programming error will also result in an alarm for the mis-programmed Zone.

The table below shows and describes common error displays, along with corrective action.

Troubleshooting

Error Display	Cause	Corrective Action
Flashing Zone digit and flashing temperature reading of "–50° C" or "–58° F".	• Open connection between sensor and EA200 / EA400 SENSOR IN connections. • Bare wire end not properly inserted into Terminal Block Adapter. • Defective sensor.	• Check connections. Make sure any splices are OK. Make sure Terminal Block Adapter is properly connected to EA200 / EA400 header connector pins. • Replace sensor as required.

Error Display	Cause	Corrective Action
Flashing Zone digit and flashing temperature reading of “150° C” or “299° F”.	• Shorted connection between sensor and EA200 / EA400 SENSOR IN connections. • Defective sensor.	• Check connections. Make sure any splices are OK. • Try Zone with another sensor. Replace sensor as required.
Excessive, obviously incorrect temperature reading (for example, “32° F” displayed for nominal actual temperature of 80° F).	Wrong programming used for sensor type used.	Make certain programming matches sensor type used. (For example, if type “Red” sensor is used, make certain Zone is set for RED °F or RED °C.)
ERR displayed	EA200 / EA400 internal calibration error	Contact Winland Technical Service at 1-800-635-4269.

Accessories

Note: In the table below, “Sensor Type Setting” specifies the appropriate sensor type selection to be entered during Zone programming for the sensor type listed. Where an accessory does not pertain to sensor type, this is denoted by “N/A” (not applicable).

Accessories

Item (Winland PN)	Description	Sensor Type Setting
Temperature Sensors		
Note: Although compatible with the EA200 / EA400, earlier-version temperature sensors (Part Numbers 1106, 1107, 1108, 1109, 1109A) are **not** recommended for new installations. ***Note:*** ° C or ° F measurement is a function of EA200 / EA400 programming. Temperature sensors can be used equally for ° C or ° F measurement/monitoring.		
Thermistor Low-Temp (“Blue”) Sensor (PN M-001-0082)	–50° C to 70° C (–58° F to 158° F) For use in coolers and freezers. Accuracy: +/-2°F	°C or °F setting BLUE BLUE
Thermistor High-Temp (“Red”) Sensor (PN M-001-0081)	0° C to 150° C (32° F to 299° F) Accuracy: +/-2°F	°C or °F setting RED RED

Accessories — continued

Item (Winland PN)	Description	Sensor Type Setting
Waterproof Thermistor Low-Temp (“Blue”) Sensor (PN M-001-0086)	–50° C to 70° C (–58° F to 158° F) Accuracy: +/-2°F	°C or °F setting BLUE BLUE
Waterproof Thermistor High-Temp (“Red”) Sensor (PN M-001-0087)	0° C to 150° C (32° F to 299° F) Accuracy: +/-2°F	°C or °F setting RED RED
Other Sensors		
Humidity Sensor HA-III (“Humid-Alert”) (PN 1128)	5% to 95% RH humidity monitoring module.	Humidity % setting
Supervised Water Sensor (PN M-001-0006)	Monitoring for presence of water.	Water Detection setting
Supervised Under-Carpet Water Sensor (PN M-001-0009)	Monitoring for presence of water.	Water Detection setting

Accessories — continued

Item (Winland PN)	Description	Sensor Type Setting
Other Accessories		
Audible Alarm Module BZ-1 (PN 1175)	Buzzer that can be connected to auxiliary relay output to provide audible alert of alarm (1.5 to 24VDC).	N/A
3-piece Terminal Block Adapter Kit (PN E-003-0010)	Adapts stripped wire ends to the header connector pins on EA200 / EA400 printed circuit board.	N/A
12VDC Power Supply (United States) (PN 1111)	Regulated 110 VAC to 12 VDC @ 300 mA (minimum) transformer suitable for use with EA200-12 / EA400-12 (for North America only).	N/A
12VDC Power Supply (Europe) (PN L-020-0085)	Regulated, Universal Input (90 to 264VAC) to 12VDC suitable for use with EA200-12 / EA400-12 (for Europe only).	N/A
24VDC Power Supply (Europe) (PN L-020-0087)	Regulated, Universal Input (90 to 264VAC) to 24VDC suitable for use with EA200-24 / EA400-24 (for Europe only).	N/A

Specifications

Specifications

Item	EA200	EA400
Dimensions	Approximately 122 mm x 152 mm x 30.5 mm (4.8” H x 6.0” W x 1.2” D)	
Weight	0.25 kg (0.55 lb.)	0.27 kg (0.6 lb.)
Mounting	Mountable directly to 2-gang standard electrical enclosure using pre-drilled holes on EA200 / EA400 rear case. Can be mounted to drywall or similar surfaces using anchor screws (not included).	
Case Material	ABS, UL94V-0 rated	
Input (Operating) Voltage	Power source must furnish REGULATED 11 to 14VDC (EA200-12 and EA400-12) or 23 to 26VDC (EA200-24 and EA400-24). Power can be supplied using a REGULATED AC/DC adapter (not supplied; see “Accessories” on page 44), or connect directly to a REGULATED DC power supply from an alarm panel. ***Note:*** Power supply requirement does not include additional requirements for loads switched through alarm output relays where power is derived from EA200 or EA400 terminal strip connections.	

Specifications — continued

Item	EA200	EA400
Low and High Adjust Range: • Temperature: • Humidity: • Water Presence:	–50°C to 150 °C –58° F to 299° F 5 to 95% RH No Alarm / Alarm ***Note:*** Usable range is also determined and may be limited by the sensor used. See “Accessories” on page 44.	
Zones	• (1) Temperature Zone (using built-in temperature sensor) • (1) Connector for external (wired) sensor corresponding to Zone 2. • Usable with Winland temperature, humidity, or water presence sensors (see “Accessories” on page 44).	(4) Connectors for external (wired) sensors corresponding to Zones 1 through 4. Usable with Winland temperature, humidity, or water presence sensors (see “Accessories” on page 44).
Sensors	• (1) Built-in temperature sensor; Range: 0°C to 50 °C (32° F to 122° F) • Provision for (1) external sensor (not supplied, see “Accessories” on page 44).	• None included. See “Accessories” on page 44.

Specifications — continued

Item	EA200	EA400
Sensor Type/Connection: • Temperature:	2-wire, 18-22AWG; maximum 304 m (1000 ft.) cabling length	
• Humidity:	3-wire, 18-22AWG; maximum 304 m (1000 ft.) cabling length	
• Water Presence:	2-wire, 18-22AWG; maximum 304 m (1000 ft.) cabling length	
Minimum Span Between High and Low Limits	• 4° C (° F) • 4% RH	
Relay Outputs	• (2) Form C with 3-terminal NC/COM/NO connections corresponding to Zones 1 and 2. • (1) Form C with 3-terminal NC/COM/NO used for Aux Output alarm (combined OR function of Zones 1 and 2).	• (4) Form C with 3-terminal NC/COM/NO connections corresponding to Zones 1 through 4. • (1) Form C with 3-terminal NC/COM/NO used for Aux Output alarm (combined OR function of Zones 1 through 4).
Relay Contact Ratings	1 A at 30 VDC	
Relay Logic	User configurable for: • Alarm= energized coil, or • Alarm= de-energized coil Each zone individually configurable.	
Display	Multiple icon Liquid Crystal Display (LCD)	

Specifications — continued

Item	EA200	EA400
Device Environmental Operating Range: • Humidity: • Temperature, Operating: • Ambient Environmental Quality:	 5 to 95% RH, non-condensing 0°C to 50°C (32° F to 122° F). Not for installation inside of coolers or freezers. Indoor use intended, non-corrosive environment	
Conformity Certifications	See page 52	
Warranty	One (1) Year Limited Warranty. See Warranty and Service Information.	

Warranty and Service Information

Winland Electronics, Inc. (“Winland”) warrants to the end user/purchaser that each product of its manufacture shall be free from defects in material and factory workmanship for a period of one year from the date of purchase, when properly installed and operated under normal conditions according to Winland’s instruction.

Winland’s obligation under this warranty is limited to correcting, without charge, at its factory any part or parts thereof which shall be returned to the factory, by the original purchaser, transportation charges prepaid, within one year of the date of purchase and which upon examination, shall disclose to Winland’s satisfaction to have been originally defective. Correction of such defects by repair to, or supplying replacements for, defective parts shall constitute fulfillment of all Winland’s obligations to purchaser under this limited warranty. Repair service performed by Winland after one year from date of purchase will be for a reasonable service charge.

This limited warranty shall not apply to any of Winland’s products which have been subject to misuse, negligence or accident or which have been repaired or altered outside of Winland’s factory. The warranty is void if the Product’s housing or cover is removed.

Winland shall not be liable for loss, damage or expense resulting, directly or indirectly, from the use of its products or any other cause.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSES, NON-INFRINGEMENT AND TITLE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING, USAGE OF TRADE OR OTHERWISE. ALL OTHER REPRESENTATIONS MADE TO THE END USER/PURCHASER BY ANY OTHER PARTY ARE ALSO EXCLUDED.

WINLAND SHALL NOT BE LIABLE TO ANY PERSON FOR INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY DESCRIPTION, WHETHER ARISING OUT OF WARRANTY OR OTHER CONTRACT, NEGLIGENCE OR OTHER TORT, OR OTHERWISE. Under no circumstances shall Winland’s liability under this limited warranty exceed the purchase price paid by the end user/purchaser for the product.

No person, agent or dealer is authorized to give warranties on behalf of Winland nor to assume for Winland any other liability in connection with any of its products.

WEEE Product Recovery/Recycling for EU Customers

In an effort to improve waste management in the European Union, the European Union has enacted directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE Directive). According to the WEEE Directive, Winland Electronics must take back waste electrical or electronic equipment covered under the WEEE Directive, at its cost, for all product it puts on the market after July 1, 2006.

The Return Process: Contact Winland via our website at www.winland.com and go to the WEEE link on the home page.

To request additional information regarding Winland's RoHS and WEEE compliance initiative and how it might impact your business, email customerservice@winland.com.

EnviroAlert Certification Info

Radio Frequency Interference Requirements: 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.

Safety Certification: The TUV certification combines electrical safety certification for Canada (SCC), United States (NRTL), and Europe (EU Directives). These products were voluntarily tested according to the relevant safety requirements and mentioned properties pertaining to this certification mark. Tested according to: CAN/CSA C22.2 No. 61010-1:2004; UL 61010-1:2004; EN 61010-1:2001.

CE Marking and European Union Compliance: Products intended for sale within the European Union are marked with the CE Mark, which indicates compliance to applicable Directives and European Norms (EN). Amendments to these Directives or ENs are included:

Applicable Directives
Electromagnetic Compatibility Directive 89/336/EEC; Low Voltage Directive 73/23/EEC; RoHS Directive 2002/95/EC; WEEE Directive 2002/96/EC

Applicable Standards
Safety: CAN/CSA C22.2 No. 61010-1:2004; UL 61010-1:2004; EN 61010-1:2001

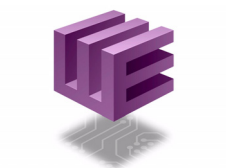
Statement of Compliance
Winland Electronics, Inc. hereby declares that this device is in compliance with all the applicable Directives, 89/336/EEC, 73/23/EEC. A Declaration of Conformity may be obtained from http://www.winland.com/doc/

Duplication or distribution of this manual and any information contained within is strictly prohibited without the express written permission of Winland Electronics, Inc. To order additional copies of this manual, or other related manuals, contact Winland Electronics Customer Service at 1-800-635-4269.

The information in this document has been carefully examined and is believed to be entirely reliable. However, no responsibility is assumed for inaccuracies.

EnviroAlert, and the **Winland logo,** are trademarks of Winland Electronics, Inc. in the U.S. Other product names and trademarks appearing in this manual are the property of their respective owners.

D-011-0093 Rev. A



Manufactured in the U.S.A by
Winland Electronics
1950 Excel Drive, Mankato, MN, 56001
Outside MN Phone: 1-800-635-4269
Phone: 507-625-7231
Fax: 507-387-2488
©Winland Electronics, Inc. 2005
www.winland.com