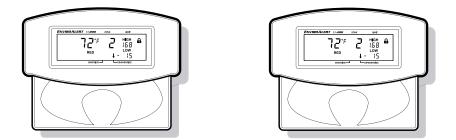
EnviroAlert[®] EA200 EnviroAlert[®] EA400

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 but are not limited to:

- 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.

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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 be monitored.

Note: The HA-4 is the replacement model for the HA-III+, which has polarity protection and is rated for both 12 and 24V. The HA-III+ is discontinued, and only works with 12V and does NOT have polarity protection. This document will only reference the HA-4.

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

- Temperature: from –58 to +302 °F (-50 to +150 °C)
- 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.

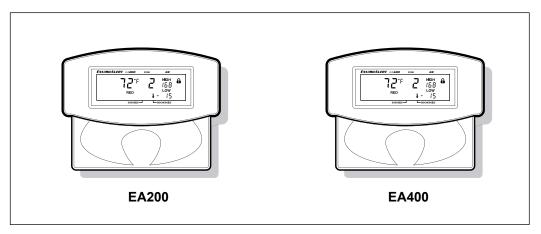


Figure 1. EnviroAlert EA200 and EA400

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 a separate location.

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 (sold separately).

EA200 Simplified Functional Diagram

Sensor Inputs

An internal temperature sensor is monitored via Zone 1.

An external sensor can be added to input 1 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.

Note: On the board there will be a white sticker ^{other.}



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

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

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

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.

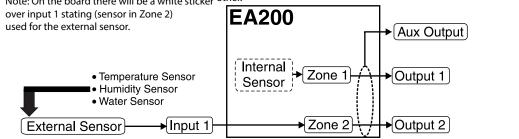


Figure 2. EA200 Functional Diagram

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 (sold separately).

EA400 Simplified Functional Diagram

Zone Control

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

Sensor Inputs

External sensors for Zone 1 through Zone 4 can be any of the types shown below. Each Zone is then programmed according to the type of sensor used.

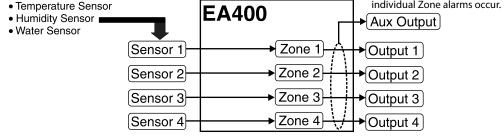
Zones 1-4 can be programmed for temperature usage, or for humidity HIGH/LOW monitoring/alarm or water detection.

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

Zone Alarm Outputs

A Form C relay output activiates 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.





Symbols on the Product or Manual Labeling

Symbols on Product or Manual

Symbol	Definition
	Attention, consult statements or notes.
X	 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.
NC / C / NO	Normally Closed, Common, and Normally Open 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
CE	Products intended for sale within the European Union are marked with the CE Mark, which indicates compliance to applicable Directives and European Norms (EN).
C NET US	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.
F©	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.

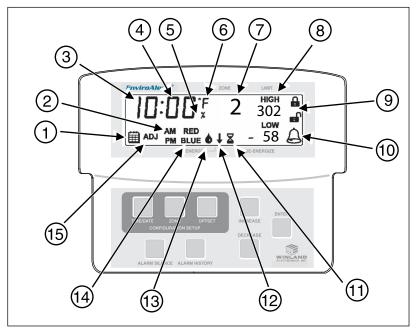


Figure 4. EA200 / EA400 Display and Icons

Display Icons

Index No.	lcon	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 Zones.
5	%	Humidity Mode icon. Indicates Zone is programmed for monitoring humidity.
6	°۲ ۲	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	5	Zone display. During programming, indicates the Zone being programmed. Display represents active data for Zone indicated.

Index No.	lcon	Function
8	нідн 302 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, limit range is allowed between 302 °F (150 °C) units to -58 °F (-50 °C) units (sensor dependent). When programmed for humidity, limit range is allowed 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	4	Alarm icon. When flashing, indicates that a Zone is in an alarm state. When steadily illumi- nated, 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	X	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 pro- grammed 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.

Index No.	lcon	Function	
	ł	Alarm Output Relay Mode icon. During programming, indicates selection of energized or de-energized alarm output relay state for the Zone being programmed.	
		NOTE Power cycle unit after making a change to DE-ENERGIZED or ENERGIZED setting. Failure to power cycle may cause relay to act abnormal or to trip.	
12		 DE-ENERGIZED will NOT trip relay when there is loss of power ENERGIZED will trip relay when there IS loss of power 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 de-energized relay mode is selected (relay is de-energized with no alarms). 	
		ENERGIZED	
13	٥	Water Presence Mode icon. Indicates Zone is programmed for detecting presence of water.	

Index No.	lcon	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 pages 44 - 47 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 press- ing 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.

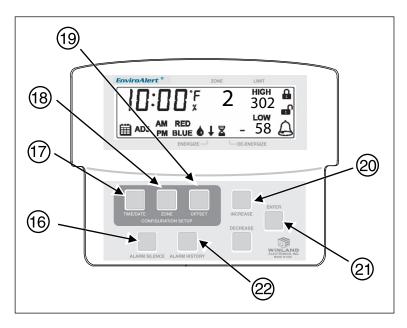


Figure 5. EA200 / EA400 Keys

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	 Unit is Locked: Pressing Zone will show the Lock Icon, and will allow you to cycle between Zones using INCREASE or DECREASE. Unit is Unlocked: Allows access to Zone Programming.
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. <i>Note</i>: 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 the most recent 8 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 pages 44 47)
- Sensor Wiring (recommend 18-22 AWG twisted-pair; not supplied)
- Alarm Wiring (recommend 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 pages 44 - 47), 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 IEC 60950 or 62368.
- *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 48 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 pages 48 51). 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 main 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 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.

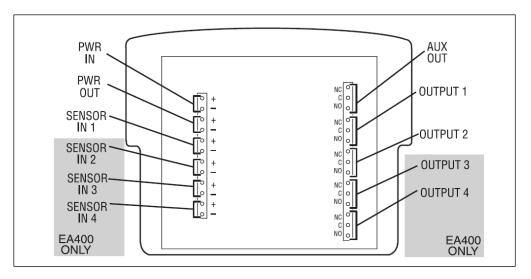


Figure 6. EA200 / EA400 Connectors

NOTE: EA200 SENSOR IN 1 there is a sticker over INPUT 1 that says SENSOR IN ZONE 2.

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 the Humid Alert PN HA-4). 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.		
🛛 🦳 through SE	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 POSITION 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 POSITION 2	EA200: Not available (blank position).EA400: Input for Zone 2 external temperature, water, or humidity sensor.		

EA200 / EA400 Connectors — continued

SENSOR IN POSITION 3	EA200: Not available (blank position).	
	EA400: Input for Zone 3 external temperature, water, or humidity sensor.	
SENSOR IN	EA200: Not available (blank position).	
POSITION 4	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.	

OUTPUT 3	EA200: Not available (blank position).
	EA400: Form C relay alarm output for Zone 3.
OUTPUT 4	EA200: Not available (blank position).
0011014	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.

- 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.
- 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 pages 44 - 47 for information regarding available sensors and their recommended applications.
- *Note:* The EA200 / EA400 can be used with earlier-version Winland temperature, humidity and water sensors. However, for new installations it is recommended that the current Winland temperature sensors be used. See "Accessories" on pages 44 47 for descriptions and model numbers of current Winland sensors.
- Install and wire all required external (separate location) sensors between the sensor and the EA200 / EA400 mounting location. Use a wiring scheme that identifies sensor wiring polarity. (The TEMP-H-S, TEMP-L-S, TEMP-L-W, and TEMP-H-W 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.
- 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 POSITION 1 (+) (-)	OUTPUT 1 NC C NO	OUTPUT 1 NC C NO
2	SENSOR IN POSITION 1 (+) (-) Sticker on input 1: SENSOR IN ZONE 2	SENSOR IN POSITION 2 (+) (-)	OUTPUT 2 NC C NO	OUTPUT 2 NC C NO
3	Not available	SENSOR IN POSITION 3 (+) (-)	Not available	OUTPUT 3 NC C NO
4	Not available	SENSOR IN POSITION 4 (+) (–)	Not available	OUTPUT 4 NC C NO

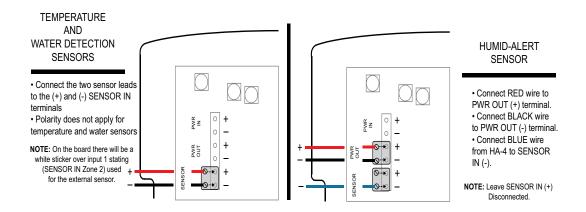


Figure 7. EA200 / EA400 Sensor Connections

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.

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

Figure 8 shows a typical alarm loop wiring configurations. Figure 8 shows an alarm loop where alarm power is derived from the alarm loop.

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.

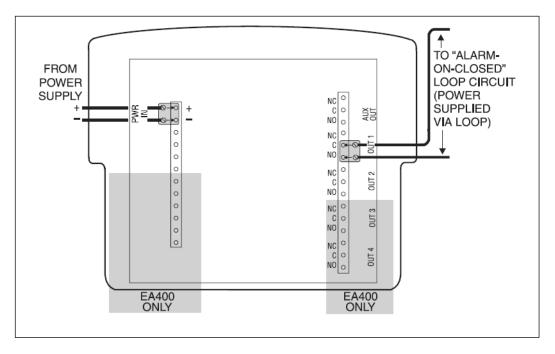


Figure 8. Typical Alarm Loop Wiring Configuration (External Power)

- Make 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.

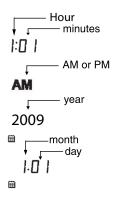
Power-up and Unlocking for Programming

Setting Time and Date

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



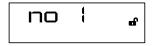
- 2. Enter current **hour** (flashing) by using the INCREASE or DECREASE keys to scroll to the current hour, then press the ENTER key.
- Enter the remaining data (in the sequence as shown below) for current date and time by similarly using the INCREASE or DECREASE keys to scroll to the desired setting,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



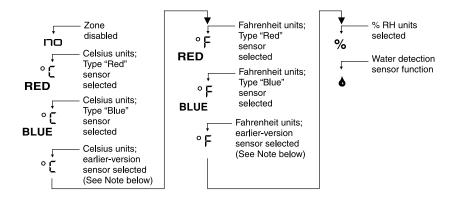
Programming the Zones

Program each Zone as follows:

1. Press the ZONE key. The Zone (1, 2, 3, or 4) 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.
- Enter the remaining data (from the choices in the sequence shown below) for the Zone being programmed by 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 sensors TEMP-H-S and TEMP-H-W.
 - **BLUE** settings are used for current-version thermistor temperature sensors TEMP-L-S and TEMP-L-W.
 - Plain °F or °C settings are used for installations where earlier-version temperature sensors (Model 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 pages 44 - 47 for detailed information, if required.

- Note: If a Zone is not to be used, set the Zone to Disabled (םת). 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 (**b**) was selected, go to step 8.
- 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.

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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.

- 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.)
 - **Note:** Changes to this setting require the unit to be power cycled after programming is complete. (Date and Time is lost on a power loss, programmed Zones are restored).
- **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.
- 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.
- 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:

- Simultaneously press and release the ALARM SILENCE and ENTER keys. The A (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 6 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 an **Alarm Display** is shown below.

In the example shown below, the HIGH limit of 288 $^\circ$ F has been exceeded by the displayed 300 $^\circ$ 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. The Zone relay that is linked to the Zone that is in alarm, such as OUT 2, is not cleared.
- **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 (nn). 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 \Box_{Γ} (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.

Error Display	Cause	Corrective Action
Flashing Zone digit and flashing temperature read- ing of "–58 °F Blue" or "–50 °C Blue".	Open connection between sensor and EA200 / EA400 SENSOR IN connections.	 Check connections. Make sure any splices are OK. Make sure Terminal Block Adapter is properly connected to EA200 / EA400
Flashing Zone digit and flashing temperature read-	 Bare wire end not properly inserted into Terminal Block Adapter. 	header connector pins.
ing of "32 °F Red or 0°C Red".	Defective sensor.	Replace sensor as required.

Troubleshooting

${\it Trouble shooting-continued}$

Error Display	Cause	Corrective Action
Flashing Zone digit and flashing temperature read- ing of "158 °F Blue or 70 °C Blue".	 Shorted connection between sensor and EA200 / EA400 SENSOR IN connections. 	 Check connections. Make sure any splices are OK.
Flashing Zone digit and flashing temperature read- ing of "302 °F Red or 150 °C Red".	Defective sensor.	 Try Zone with another sensor. Replace sensor as required.
Excessive, obviously incor- rect temperature reading (for example, "32 °F" dis- played 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 cer- tain 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

ltem (Model Number)	Description	Sensor Type Setting
Temperature Sensors	6	
<i>Note:</i> Although compatible with the EA200 / EA400, earlier-version temperature sensors (Model Numbers 1106, 1107, 1108, 1109, 1109A) are NOT recommended for new installations. <i>Note:</i> °F or °C measurement is a function of EA200 / EA400 programming. Temperature sensors can be used equally for °F or °C measurement/monitoring.		
Thermistor Low Range Stainless-Steel ("Blue") Sensor (PN: TEMP-L-S)	–58 to +158 °F (–50 to +70 °C) For use in coolers and freezers. Accuracy: ±2 °F (±1.1 °C)	°F or °C setting BLUE BLUE
Thermistor High Range Stainless-Steel ("Red") Sensor (PN: TEMP-H-S)	32 to 302 °F (0 to 150 °C) Accuracy: ±2 °F (±1.1 °C)	°F or °C setting RED RED

ltem (Model Number)	Description	Sensor Type Setting
Waterproof Thermistor Low-Temp ("Blue") Sensor (PN: TEMP-L-W)	–50 to +70 °C (–58 to +158 °F) Accuracy: ±2 °F (±1.1 °C)	°F or °C setting BLUE BLUE
Waterproof Thermistor High-Temp ("Red") Sensor (PN: TEMP-H-W)	32 to 221 °F (0 to 105°C) Accuracy: ±2 °F (±1.1 °C)	°For °ౖsetting RED RED
Other Sensors		
Humidity Sensor ("Humid-Alert") (PN: HA-4)	5 to 95% RH humidity monitoring sensor.	Humidity 拨 setting
Supervised Water Sensor (PN: W-S-S)	Monitoring for presence of water	Water Detection 💧 setting
Audible Alarm Module (3rd Party Sensor)	Buzzer that can be connected to auxil- iary relay output to provide audible alert of alarm (1.5 to 24V DC).	N/A

ltem (Model Number)	Description	Sensor Type Setting
Other Accessories		
12V DC Power Adapter Kit (United States) (PN: 12VDC-KIT)	Input - 90V AC to 264V AC Output - 12V DC @ 1A	N/A
12V DC Power Supply (United States) (PN: 12VDCT)	Regulated 110V AC to 12V DC @ 300mA (minimum) transformer suit- able for use with EA200-12 / EA400-12 (for North America only). NOTE: Item will be discontinued in 2024. Use PN: 12VDC-KIT.	N/A
2-piece Terminal Block Adapter Kit (PN: EA-TBK)	Adapts stripped wire ends to the header connector pins on EA200 / EA400 printed circuit board.	N/A
Buffer Tube (PN: TEMP-B-T)	Glass Tube (40ml) with grommet. Works with TEMP-L-S, TEMP-L-W, TEMP-H-S, TEMP-H-W.	N/A

ltem (Model Number)	Description	Sensor Type Setting
Glycerin Bottle (PN TEMP-G-B)	6 oz Bottle of Glycerin and Grommet Cap. (Accepts one TEMP-L-S, TEMP-L-W, TEMP-H-S, TEMP-H-W).	N/A
TEMP Sensor Probe Housing (PN TEMP-P-H)	Accepts one TEMP-L-W or TEMP-H-W probe only.	N/A

Specifications

Specifications

Item	EA200	EA400
Dimensions	Approximately 122mm x 152mm x 30.5mm (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 12V DC (EA200-12 and EA400-12) or 24V DC (EA200-24 and EA400-24). Power can be supplied using a REGULATED AC/DC adapter (not sup- plied; see "Accessories" on pages 44 - 47), or connect directly to a REGULATED DC power supply from an alarm panel.	
	Note: Power supply requirements for loads switched where power is derived from E/ nections.	nt does not include additional d through alarm output relays \200 or EA400 terminal strip con-

Item	EA200	EA400
Low and High Adjust Range: Temperature: 	–58 to 302 °F –50 to 150 °C	
Humidity:	5 to 95% RH @ 77 °F (25 °C) ±3 for HA-4 device	3% from 25% RH @77 °F (25 °C)
Water Presence:	No Alarm / Alarm <i>Note:</i> Usable range is also determined and may be limited by the sensor used. See "Accessories on pages 44 - 47).	
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 pages 44 - 47). 	 (4) Connectors for external (wired) sensors correspond- ing to Zones 1 through 4. Usable with Winland tempera- ture, humidity, or water pres- ence sensors (see "Accessories" on pages 44 - 47).
Built-in Sensors	 One temperature sensor; Range: 32 to 122 °F (0 to 50 °C) 	• N/A

ltem	EA200	EA400
External Sensors	 Provision for (1) external sensor (not supplied, see "Accessories" on pages 44- 47). 	 Provision for (4) external sensor (not supplied, see "Accessories" on pages 44 - 47).
Sensor Type/Connection: • Temperature:	2-wire, 18-22AWG; maximum 304m (1000') cabling length	
• Humidity:	3-wire, 18-22AWG; maximum 304m (1000') cabling length	
Water Presence:	2-wire, 18-22AWG; maximum 304m (1000') cabling length	
Minimum Span Between High and Low Limits	• -4 °F(4 °C) • 4% RH	
Relay Outputs	 (2) Form C with 3-terminal NC/C/NO connections corresponding to Zones 1 and 2. (1) Form C with 3-terminal NC/C/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	30V DC @ 1A	1

Item	EA200	EA400
Relay Logic	User configurable for: • Alarm = energized coil, or • Alarm = de-energized coil Each Zone individually configurable.	
Display	Multiple icon Liquid Crystal Display (LCD)	
Device Environmental Operating Range: • Humidity: • Temperature, Operating:	5 to 95% RH, non-condensing 32 to 122 °F (0 to 50 °C). Not for installation inside of coolers or freezers.	
Ambient Environmental Quality:	Indoor use intended, non-corrosive environment	
Conformity Certifications	See pages 53 - 54	
Warranty	One (1) Year Limited Warranty. See Warranty and Service Information.	

Warranty and Service Information

Winland Electronics, Inc. ("Winland") warrants to the original purchaser from Winland that each product of Winland's that it manufactures shall be free from defects in material and factory workmanship for a period of one (1) year from the date of purchase, when properly installed and operated under normal conditions according to Winland's instruction.

Winland's obligation under this limited warranty is limited to correcting the product without charge, at its factory any part or parts thereof which are returned, transportation charges prepaid, to the factory within one year of the date of purchase subject to Winland's examination showing to Winland's satisfaction to be covered by this warranty.

Product returns will not be accepted unless a Return Material Authorization has been issued by Winland, which is subject to purchaser's identification of the purchase order number and product serial number. UNAUTHORIZED RETURN SHIPMENT OR SHIPMENT CONTRARY TO WINLAND'S WRITTEN INSTRUCTIONS WILL VOID THIS LIMITED WARRANTY. Correction of such defects by repair, replacement, or refund of the amount paid for the product, at Winland's option, shall constitute fulfillment of all Winland's obligations under this limited warranty. Repaired and replacement parts will be warranted for the remainder of the original product warranty. Repairs not covered by this limited warranty may be offered by Winland for a charge.

This limited warranty shall not apply to any of Winland's products which have been subject to misuse, negligence, accident, or which have been repaired or altered outside of Winland's factory.

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WEEE Product Recovery/Recycling for EU Customers

In an effort to improve waste management in the European Union, the European Union has enacted directive 2011/65/EU, 2015/863 & 2012/19/EU 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 the expense of the sender.

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

For additional information regarding environmental compliance please visit Environmental Compliance at www.winland.com or email tech.support@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: EN61010-1:2010/A:2019; UL 61010-1:2012/R:2019-07; CSA C22.2 NO. 61010-1:2012/A1:2018.



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 2011/65/EU & 2015/863; 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 https://www.winland.com/resources/regulatory-compliance/eu-declaration-of-conformity/

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Winland Electronics 424 North Riverfront Drive, Suite 200 Mankato, MN, 56001

Phone: 1-800-635-4269

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