

1-Zone | Outdoor Alarm System, Type 4X

Operation, Maintenance and Installation Manual

Introduction



SPECIFICATIONS:

Primary Power
120VAC or 240VAC, 50/60 Hz
(voltage depends on model)

Secondary Power
9-10VDC, 200mA

Watts
3.0 Watts

Field Connection Sensor
9-10VDC, 1mA minimum
(signaling device)

Auxiliary Contacts
120VAC, 0.3A maximum
24VDC, 0.5A maximum
Normally Open; Single Pole, Single Throw

Pump Terminal Block (optional)
120/230VAC (pump power)
15A, 120/230VAC (pump switch)
Single Pole, Single Throw

LEDs
Green (power and zone indicator)
Red (alarm)

Buzzer
5-30VDC, 95 dB @ 2-feet

Control Transformer
120VAC or 240VAC, 2.4VA
(voltage depends on model)

Battery Backup
Lithium 9VDC battery
(not included)

Enclosure
Thermoplastic
4 x 4 x 3 (inches)
Type 4X, Outdoor
Lockable Latch

Certifications
CSA (US and Canada)

Three-Year Limited Warranty



Safety Guidelines

Before proceeding with the installation or operation of the product, make sure to read all instructions thoroughly, as well as complying with all federal, state and local codes, regulations and practices. The product must be installed by qualified personnel familiar with all applicable local electrical and mechanical codes. Refer to the National Electric Code (NFPA 70). Failure to properly install and test this product can result in personal injury or equipment malfunction.

1. DISCONNECT POWER when installing or servicing the product. Failure to disconnect all power sources could result in serious injury or death.
2. NEVER enter a flooded space without proper Personal Protective Equipment (PPE). Always wear dielectric rubber boots and other applicable protective equipment when water is on the ground or floor and you must service an energized pump, alarm system, or product.
3. DO NOT enter the water if the water level is higher than that of the protection your PPE offers or if your PPE is not watertight.
4. DO NOT use this product with or near flammable liquids.
5. DO NOT install this product in locations classified as hazardous or in explosive atmospheres as defined by any applicable electrical safety code.

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Description of Operation

The VersAlarm™ 4X 1-Zone alarm panel with included auxiliary contacts is outdoor rated and powered by 120VAC or 240VAC (voltage depends on model) with conduit connections (required). When powered, the green LEDs (bottom/middle) will illuminate (solid) to indicate the alarm is powered and the included two-level press-and-hold feature can disable LEDs (see factory settings, page 6). Install a 9VDC lithium battery for battery backup during power outages. This alarm panel can be used for a wide variety of applications, including but not limited to: septic tanks, sump pits, holding tanks, pump chambers, and water tanks.

The alarm panel is equipped with audible and visual alarm indication, activated by a normally open or normally closed sensor wired to the quick connect terminals. A variety of sensors can be used such as a float switch, pressure switch, or any "dry" type sensor that "closes" during an alarm condition (normally open or normally closed). Use the auxiliary contacts to connect to building automation systems (BAS) and phone dialers. An optional pump terminal block can be added to connect incoming pump power, pump connections, and pump switch in the same enclosure with a separate conduit entrance.

An alarm condition occurs when the sensor (signaling device) contact is activated, during which the red alarm LEDs will illuminate (flashing) with the left green LED illuminated (solid) for zone alarm indication, buzzer will annunciate with a pulse tone, and auxiliary contacts will activate. The alarm condition will stay on until the sensor is deactivated. Press and hold (1-second +) the test/silence capacitive touch button to silence the buzzer during an alarm condition, the alarm LEDs remain illuminated, flashing. The silence condition will reset when the sensor deactivates and the alarm will auto reset for the next alarm cycle. Test alarm monthly to ensure system integrity, press and hold (1-second +) the test/silence button, the red alarm LEDs should illuminate (flashing), buzzer should annunciate with a pulse tone, and auxiliary contacts should activate.

Battery Backup - Installation and Quick Test

1. To install or replace the battery for the backup power feature, open the alarm panel enclosure cover.
2. Install a 9VDC lithium battery (not included) matching the terminals on the alarm circuit board (Fig. 1A) to the terminals on the top of the battery. Make sure the connection is securely fastened.
3. Test to verify proper installation of the battery, the green power LEDs (bottom/middle) will not illuminate (Fig. 2) to conserve power. Press and hold (1-second +) the test/silence capacitive touch button to activate alarm test. The red alarm and green power/zone indicator LEDs should illuminate in quick alternating pulses (Fig. 3), buzzer should annunciate with four quick pulse tones matching indicators, and auxiliary contacts should activate.

Note: The LED pulse/flash functions and buzzer tone patterns are different during the testing process while on battery power versus when the incoming power is connected. See system testing on page 5 for testing with incoming power connected and page 6 to change factory settings for disabling LEDs.

CAUTION: Do not connect incoming power to the alarm panel until all steps of the installation are complete and the system is ready for testing.

WARNING! Lithium batteries MUST be used in any installation where the temperature can drop below 32 degrees Fahrenheit. Failure to install the proper battery type will cause battery failure at low temperatures and may not provide battery backup alarm protection.

(Fig. 1)



(Fig. 2)



(Fig. 3)



Low Battery at 7.8 volts or Improper Installation (when powered):
The red LEDs illuminate and buzzer annunciates in sync with two quick pulses every 10-seconds, the auxiliary contacts will remain closed.

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Installation

1. Prior to mounting the alarm panel, install the conduit connections required per application. Open cover prior to step 2.
2. Determine the center hole locations, mark and drill out on the bottom of the enclosure, separated by approximately two-inches. The size(s) will depend on desired conduit fitting (maximum 0.75"). Place the conduit fitting (Fig. 4A) in the drilled out hole and make sure it's secured. Then install conduit (Fig. 4B) into the fitting.

Note: Seal all conduits to prevent moisture and gases from entering the enclosure per local codes.

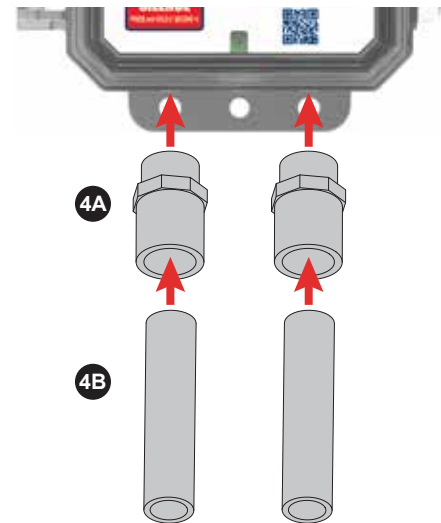
CAUTION: Nonmetallic enclosure does not provide grounding between conduit connections. Use grounding bushings and jumper wires.

3. Determine the mounting location for the alarm panel, it's recommended to use four (4) screws to properly mount the enclosure: top left, top right, bottom left, and bottom right (Fig. 5A).
4. Hold the alarm panel in the desired mounting location, mark the drill hole locations. Once marked, drill pilot holes for screws (not included) and use wall mount anchors (not included) if necessary. Place alarm panel in the mounting location, adjust until pilot holes are lined up with the enclosure and fasten screws to secure the alarm panel in place.

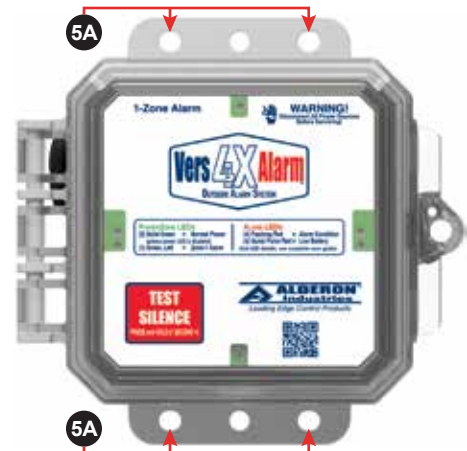
Mounting Holes:

- i. Left to Right - 1.97" (center to center)
- ii. Top to Bottom - 5.37" (center to center)

(Fig. 4)



(Fig. 5)



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Wiring - Terminal Block and Wago Connectors

1. The wiring diagram (Fig. 6) shows eight terminals on the circuit board that consists of four pairs of connections. Starting from the top, terminals are included for: incoming power, alarm buzzer, auxiliary contacts, and sensor (signaling device). The incoming power should be on a separate circuit breaker from any other device and not on a switched receptacle to maintain power integrity.

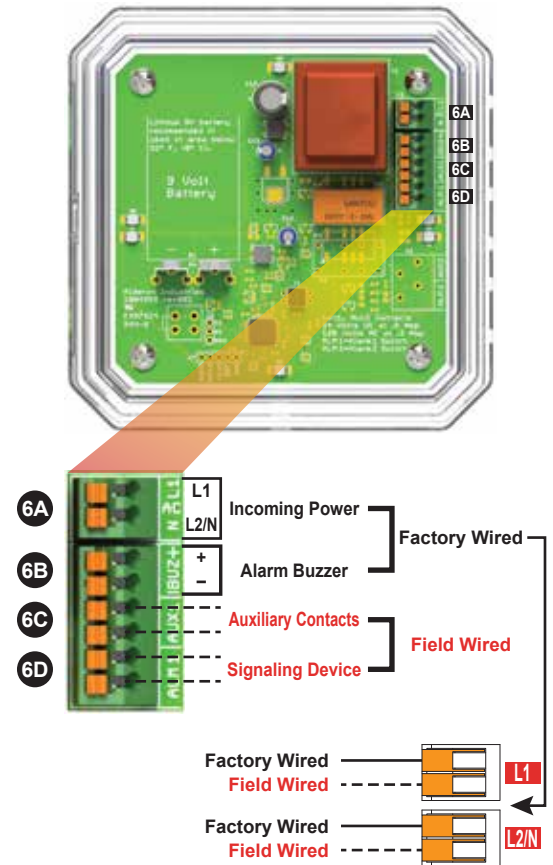
- 6A = Incoming Power; L1 and L2/N (voltage depends on model)
- 6B = Alarm Buzzer; "+" and "-"
- 6C = Auxiliary "Dry" Alarm Contacts
- 6D = Sensor (signaling device)

CAUTION: Do not connect incoming power to the alarm panel until all steps of the installation are complete and the system is ready for testing.

2. The line connections from the incoming power are terminated into the respective Wago connectors/terminals (Fig. 6A). Voltage depends on model, 120VAC = L1 and N or 240VAC = L1 and L2.
3. The alarm buzzer is factory wired from the circuit board terminals to the buzzer inside the alarm panel enclosure (Fig. 6B).
4. If connecting to an alarm security system or building automation system (BAS), use 18 gauge 2-conductor wire to connect to the auxiliary contact terminals on the circuit board (Fig. 6C, AUX1).
5. The sensor (signaling device) is connected to the alarm terminals on the circuit board (Fig. 6D, ALM1).
6. NEVER leave ground wire exposed inside the panel, use provided Wago connector for ground termination.

Note: Push the orange button on the terminal block with a small screwdriver or pointed object to "release" the terminal to install or uninstall a wire.

(Fig. 6)



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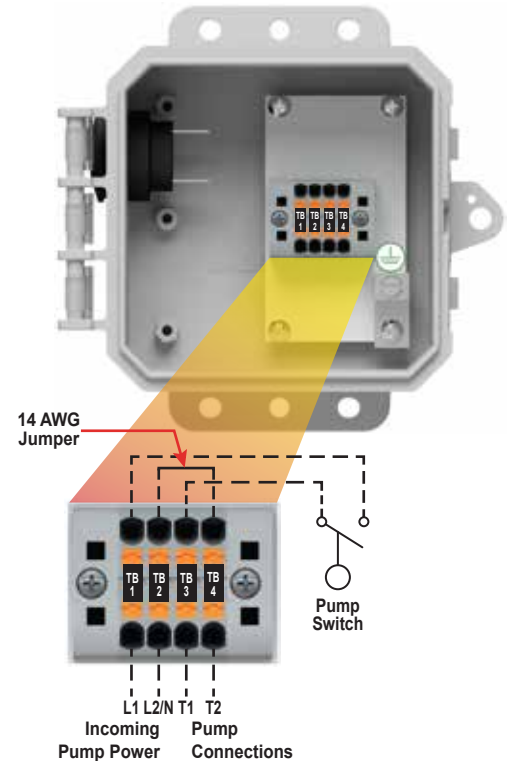
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Wiring - Pump Terminal Block (optional)

1. Models that include a pump terminal block, refer to the diagram (Fig. 7) with instructions in this section for wiring information. Maximum wire size for the terminals is 12 gauge (AWG).
 2. The incoming pump power (L1 and L2/N) is wired to the bottom side of TB1 and TB2. Rated 120/230VAC, 15 Amps, 50/60 Hz. Pumps must contain integral thermal overload protection.
- CAUTION:** Do not connect incoming power to the alarm panel circuit board and/or incoming pump power to the terminal blocks until all steps of the installation are complete and the system is ready for testing.
3. T1 and T2 pump connections are wired to the bottom of TB3 and TB4.
 4. NEVER leave ground wire(s) exposed inside the panel, use provided ground lug for wire termination.
 5. The bare lead pump switch (operates pump) is wired to the top side of TB1 and TB3.
 6. A jumper wire MUST be installed in the top side of TB2 and TB4, use 14 gauge (AWG) single conductor wire.

Note: Push the orange button on the terminal block with a small screwdriver or pointed object to "release" the terminal to install or uninstall a wire.

(Fig. 7)



Testing

Make sure all steps of the installation process are completed and there is power to the product. When powered, the green LEDs should illuminate. Test monthly to ensure system integrity.

1. To test alarm function, press and hold (1-second +) the test/silence button, the red alarm LEDs should illuminate (Fig. 8, flashing) with the green power/zone indicator LEDs illuminated (solid), buzzer should announce in a pulse tone, and auxiliary contacts should activate.
2. The sensor (signaling device) should be connected to terminals labeled ALM1 on the alarm circuit board. Activate the sensor, the red alarm LEDs should illuminate (flashing) and the left green zone indicator LED should illuminate (solid), buzzer should announce in a pulse tone, and the auxiliary contacts should activate.
3. To test alarm silence function, activate the sensor to simulate an alarm condition, then press/hold (1-second +) the test/silence button and the buzzer should silence while the alarm LEDs remain illuminated, flashing and the left green zone indicator LED should remain illuminated (solid). Then, deactivate the sensor, the alarm condition should clear and the alarm should auto reset for the next alarm cycle.
4. Models with a pump terminal block, the pump should be off once power is applied and the pump switch is deactivated. Activate the pump switch and the pump should turn on. Repeat to ensure switch works properly.

(Fig. 8)



Notes: Place finger in the center of the test/silence capacitive touch button to activate, button sensor will ignore edge touches. To disable the green power LEDs, press and hold the test/silence button for approximately 8-seconds. The green LEDs will pulse three times and the green power LED indicators will turn off. Repeat this process to turn them back on.

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Factory Settings and Functions

The VersAlarm™ 4X comes standard from the factory with the settings listed in this section. Review the operation and settings information below, reference when required to disable LEDs or for troubleshooting purposes.

1. When powered, the green LEDs (Fig. 9; bottom/middle) will illuminate (solid) to indicate the alarm is powered. The power LEDs are factory set to be on (solid) and will pulse when disabling this feature.
2. The red alarm LEDs (Fig. 10; top/bottom/left/right) will illuminate during a liquid level alarm condition (flashing) and for a low battery alarm at 7.8 volts or improper battery installation (quick pulse).

(Fig. 9)



(Fig. 10)



3. Green Power On LED Indicators:

- a. Factory set to "on" (illuminate/solid).
- b. Disable by pressing and holding the test/silence capacitive touch button for approximately 8-seconds, the green LEDs will pulse three times and the green power LED indicators will turn off. Repeat this process to turn them back on.

4. Red Low Battery Alarm LED Indicators:

- a. The low battery alarm LEDs are factory set to "off" (disabled). The alarm panel will automatically enable the low battery alarm the first time a battery is connected. The battery must be inserted for approximately one-minute for the auto-enable feature to activate, then the green LEDs will pulse four times to indicate that the low battery alarm is enabled.

Note: The low battery alarm feature is automatically enabled only after a battery is connected for the first time. The alarm feature must then be manually enabled or disabled.

- b. Disable low battery alarm LEDs by pressing and holding the test/silence capacitive touch button for approximately 16-seconds, the green LEDs will quick pulse five times to indicate the low battery alarm has been disabled.
- c. Enable low battery alarm LEDs by pressing and holding the test/silence capacitive touch button for approximately 16-seconds, the green LEDs will quick pulse five times and then the green LEDs will pulse five times upon release of the button to indicate the low battery alarm has been enabled.

Note: When the system is running on battery backup power and the low battery alarm is disabled, the low battery alarm will temporarily re-activate to indicate when the battery is about to lose its charge. The settings will return to the last programmed state upon full power being restored.

Note: The LED settings cannot be changed while the system is running on battery backup power.