Liberty Pumps®

A Family and Employee Owned Company

ALM-2W Alarm

Indoor/Outdoor Rated Alarm Panel

USER GUIDE

7599000B

PART/MODEL NUMBER:

ALM-2W



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Introduction

The ALM-2W alarm panel is a versatile option for indoor and outdoor utility monitoring. This alarm 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 has several setup options that include: indoor wall mount and outdoor mounting to a wall or post. In addition, there are a variety of sensors that can be used with the alarm panel for liquid level monitoring. Contact Liberty Pumps customer service with any questions at 1-800-543-2550.

Safety Guidelines

Before proceeding with the installation or operation of this product, read all instructions thoroughly, as well as complying with all federal, state and local codes, regulations, and practices. This product must be installed by qualified personnel familiar with all applicable local electrical and mechanical codes. Refer to the National Electrical Code (NFPA 70). Failure to properly install, test, and operate 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 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.

USER GUIDE | ALM-2W Indoor/Outdoor Alarm

Product Included

This model includes: (1) ALM-2W, (2) Screws, and (1) WAGO connector.

(1) ALM-2W Alarm Panel

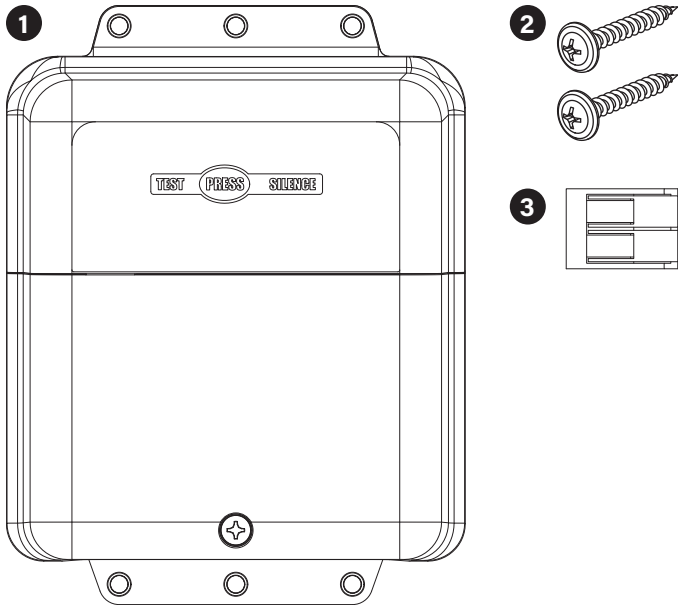
The ALM-2W alarm panel includes one sensor input equipped with audible and visual alarm indication. The alarm is suitable for both indoor and outdoor applications, and is compatible with a variety of sensors for liquid level monitoring.

(2) Screws

Two screws are included to mount the alarm panel.

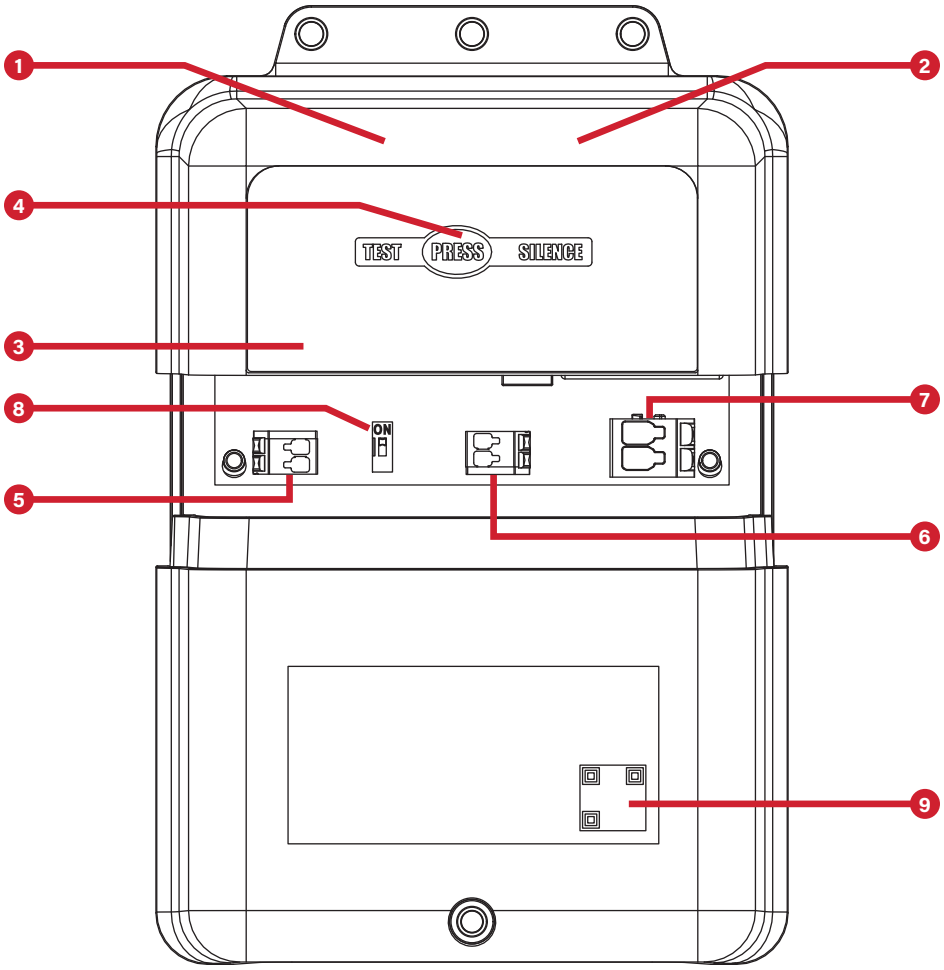
(3) WAGO Connector

The WAGO connector is included for ground wire termination.



Features

Refer to the illustration below to reference the feature descriptions provided.



(1) **Power On Indicator** - A green LED will illuminate inside the top cover of the enclosure to indicate that the unit is powered on.

(2) **Alarm Beacon** - During an alarm condition, the green power on indicator will turn off and the red alarm LEDs will illuminate, flashing inside the top cover of the enclosure.

(3) **Alarm Buzzer** - The alarm buzzer will annunciate in addition to the visual indication provided by the red LEDs inside the top cover of the enclosure during an alarm condition (not shown/visible).

(4) **Test/Silence Pushbutton** - This button may be used to either test or silence the alarm. If the alarm is not in the state of an alarm condition, the button will test the alarm activating the alarm beacon and buzzer. During an alarm condition, it will silence the buzzer and the red LEDs will stop flashing and remain solid.

(5) **Sensor Input** - One set of sensor terminals is included that can be used to connect a variety of sensors.

(6) **Auxiliary Contacts** - One set of auxiliary contact terminals is included allowing the alarm to interface with an external device. The contacts are rated for 24VDC at 0.5A maximum.

(7) **Incoming Power** - The alarm has terminals for the line (L1) and neutral (N) wires to install 120VAC power from the mains. If 230VAC power is needed, visit LibertyPumps.com or call factory for options.

(8) **Power Indicator Turn On/Off** - Flip the switch upward/downward to turn on/off the green power indicator. Reverse process to turn power indicator back on/off.

(9) **QR Code** - Scan code which directs you to LibertyPumps.com where additional information can be found for the ALM-2W.

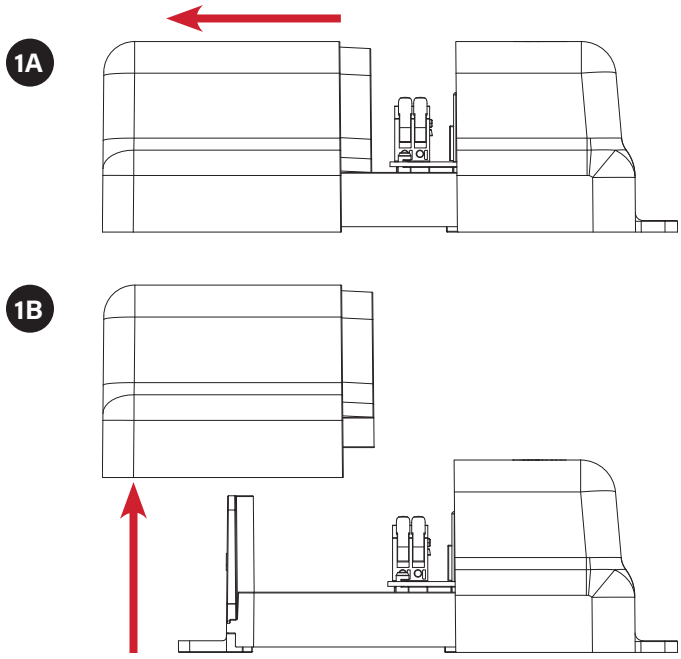
Installation

DISCONNECT ALL POWER SOURCES WHEN INSTALLING OR SERVICING THIS PRODUCT. FAILURE TO TURN OFF ALL POWER SOURCES COULD RESULT IN SERIOUS INJURY OR DEATH.

Wall Mounting Enclosure

STEP 1: REMOVE BOTTOM COVER

The bottom enclosure cover is fastened by a single screw on the bottom of the enclosure. Remove the screw and slide the cover directly downward (1A) and then pull directly away from the enclosure (1B).

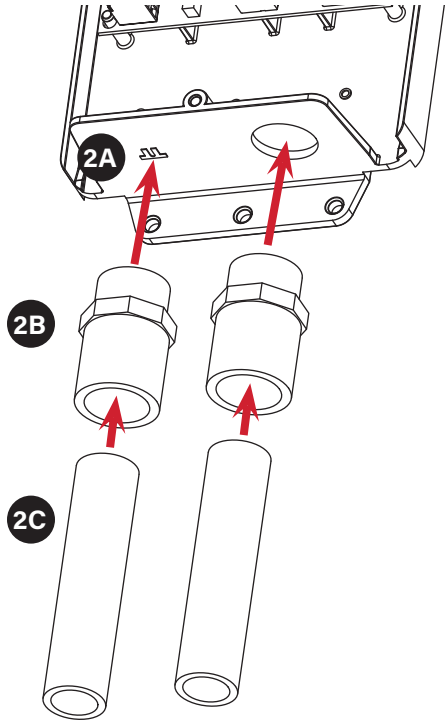


STEP 2: INSTALLING CONDUIT / FITTINGS

Using the pre-marked center hole locations (2A), mark and drill out on the bottom of the enclosure. The size(s) will depend on desired conduit fitting (maximum 0.75"). Place the conduit fitting (2B) in the drilled out hole and make sure it's secured. Then install conduit (2C) into the fitting.

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

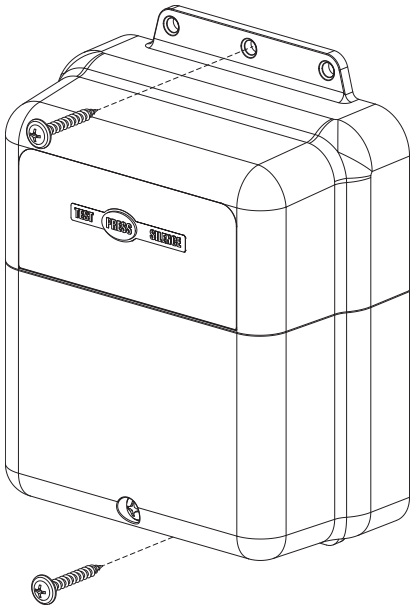
CAUTION: Nonmetallic enclosure does not provide proper grounding between conduit connections. Use grounding bushings and jumper wires.



Wall Mounting Enclosure (continued)

STEP 3: MOUNT ENCLOSURE

Determine the mounting location for the ALM-2W alarm. Hold the alarm up to the desired mounting location, mark the drill hole locations. Once marked, drill pilot holes for screws (two included) and use wall mount anchors (not included) if necessary. Place enclosure in the mounting location, adjust until the pilot holes are lined up with the enclosure and fasten screws to secure the alarm panel in place.



Wiring

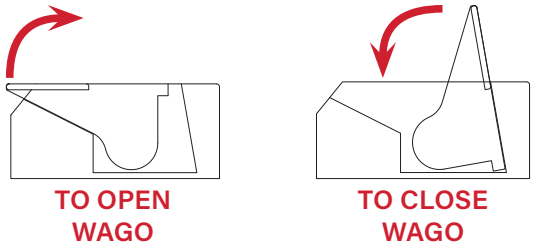
STEP 1: INSTALLING WIRE INTO WAGO CONNECTOR

Before making wire connections and terminations, carefully read this step for proper functions of both types of WAGO connectors.

WARNING: Improper use of the connectors will cause damage. DO NOT use mechanical tools to open or close, hand usage only.

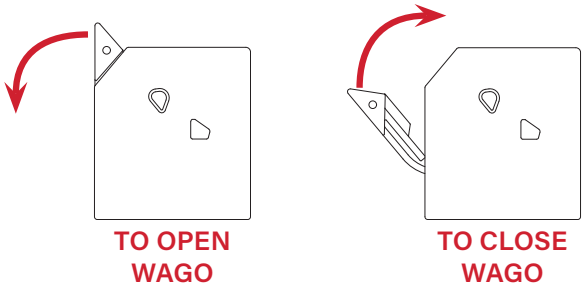
Wiring Termination - Splice Connector WAGO:

1) Lift tab(s) upward.
2) Insert wire(s) into slot.
3) Press tab(s) downward.
4) Make sure wire(s) are secured.



Wiring Connection - Quick Snap Terminal WAGO:

1) Press tab(s) outward. DO NOT open past 40° angle.
2) Insert wire(s) into slot.
3) Press tab(s) inward.
4) Make sure wire(s) are secured.



Wiring (continued)

STEP 2: WIRING

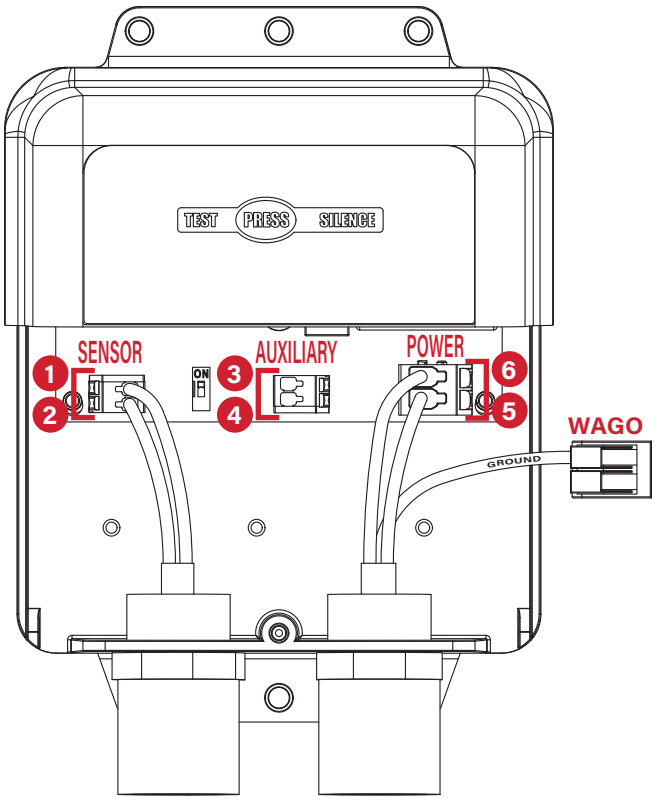
The wiring diagram shows the three quick snap WAGO terminals on the alarm panel circuit board that consists of three pairs of connections.

1) Starting from the left, the first pair of terminals (1 and 2) are for the sensor connections (FLOAT IN). The sensor is typically a float switch, but most digital switch sensors will work with the sensor input.

2) The second pair of terminals (3 and 4) are for the auxiliary contacts (AUX OUT). This connection can be used on most digital peripheral alarm monitors or extensions. Installing an auxiliary device is optional.

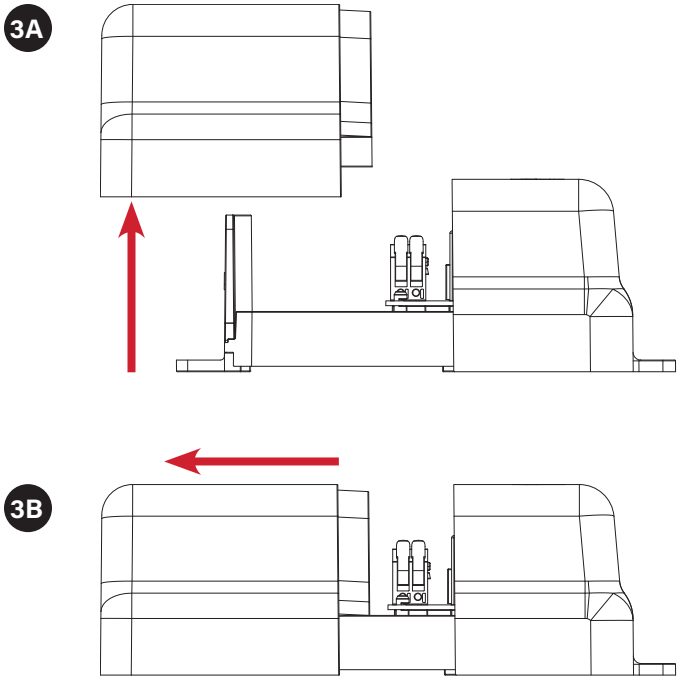
3) The third pair of terminals (5 and 6) are for the incoming power (AC IN). The line connection (L1) is installed in terminal 5 and the neutral (N) is installed in terminal 6.

4) NEVER leave ground wire exposed inside the panel, use provided WAGO connector for ground termination.



STEP 3: INSTALL BOTTOM COVER

Place the bottom of enclosure back on, lining up with the grooves (3A). Then slide the bottom piece directly upward (3B) until it meets the top of the enclosure so the screw hole is lined up. Replace the screw at the bottom of the enclosure.



Testing

Make sure the installation process is completed and there is power to the product.

STEP 1: TEST ALARM

Press and hold the test/silence pushbutton on the front of the enclosure. The red LEDs should illuminate (flashing), buzzer should annunciate, and auxiliary contacts should activate (if connected; not shown).

STEP 2: TEST SENSOR

The sensor should be connected to terminals 1 and 2. Activate the sensor, the red LEDs should illuminate (flashing), buzzer should annunciate, and auxiliary contacts should activate (if connected; not shown).

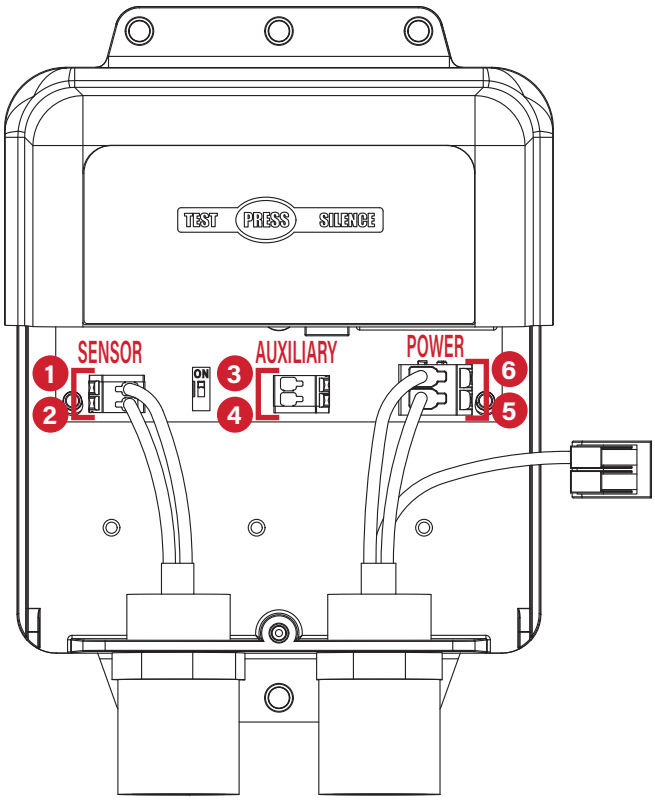
STEP 3: TEST ALARM SILENCE

Press the test/silence pushbutton on the front of the enclosure while the sensor is activated. The red LEDs should stop flashing and remain solid, buzzer should silence, and auxiliary contacts should remain activated. The alarm condition will clear when the sensor is deactivated and the alarm will auto reset for the next alarm cycle.

STEP 4: TEST WEEKLY

To ensure the product is functioning properly, test once a week.

Note: If any of the testing procedures fail or the alarm panel does not operate as described, see the troubleshooting section on page 12.



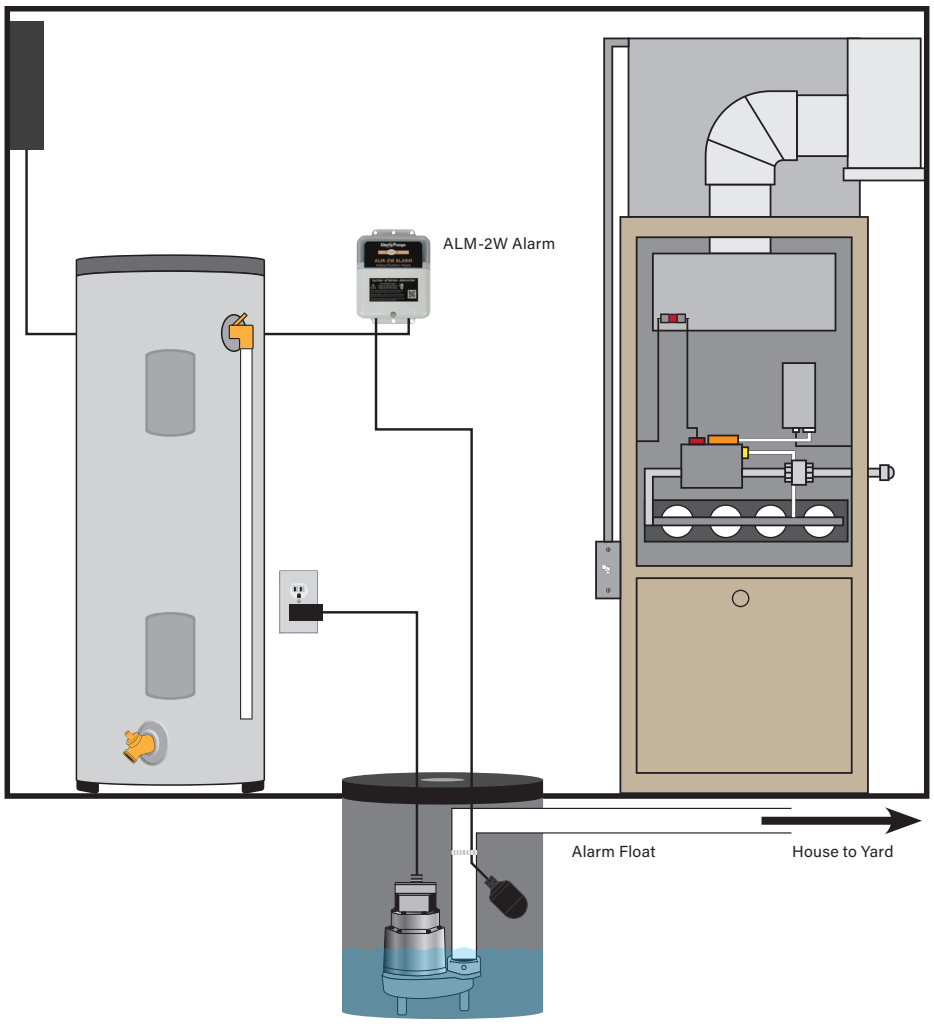
General Operation

The ALM-2W is an alarm panel rated for indoor or outdoor use equipped with audible and visual alarm indication. The alarm panel is activated by a field installed normally open sensor. 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. This manual focuses on the float switch sensor. The applications are not limited to what is listed in this user guide. Follow all individual instructions for sensors and accessories used with the alarm panel.

The following applications can be found in this user guide: Sump Pit Monitoring and Septic Tank Monitoring.

Sump Pit Monitoring

The diagram below is a typical setup for sump pit monitoring. The ALM-2W alarm panel is mounted on the wall. The pump and alarm are powered by 120VAC. The alarm float switch is connected to the sensor input for high water indication. If water level is not high enough to activate the alarm float switch, then the top cover of the enclosure will be green. If the alarm float switch is activated, then the top cover of the enclosure will flash red and the buzzer will annunciate. The alarm condition will stay on until the alarm float switch is deactivated. If the silence pushbutton is pressed during an alarm condition, then the top cover of the enclosure will turn solid red and the buzzer will silence. The silence condition will reset when the alarm float switch deactivates. If the alarm is in silence mode for longer than 24 hours, the alarm will reactivate. If auxiliary contacts are used, they will activate during an alarm condition.

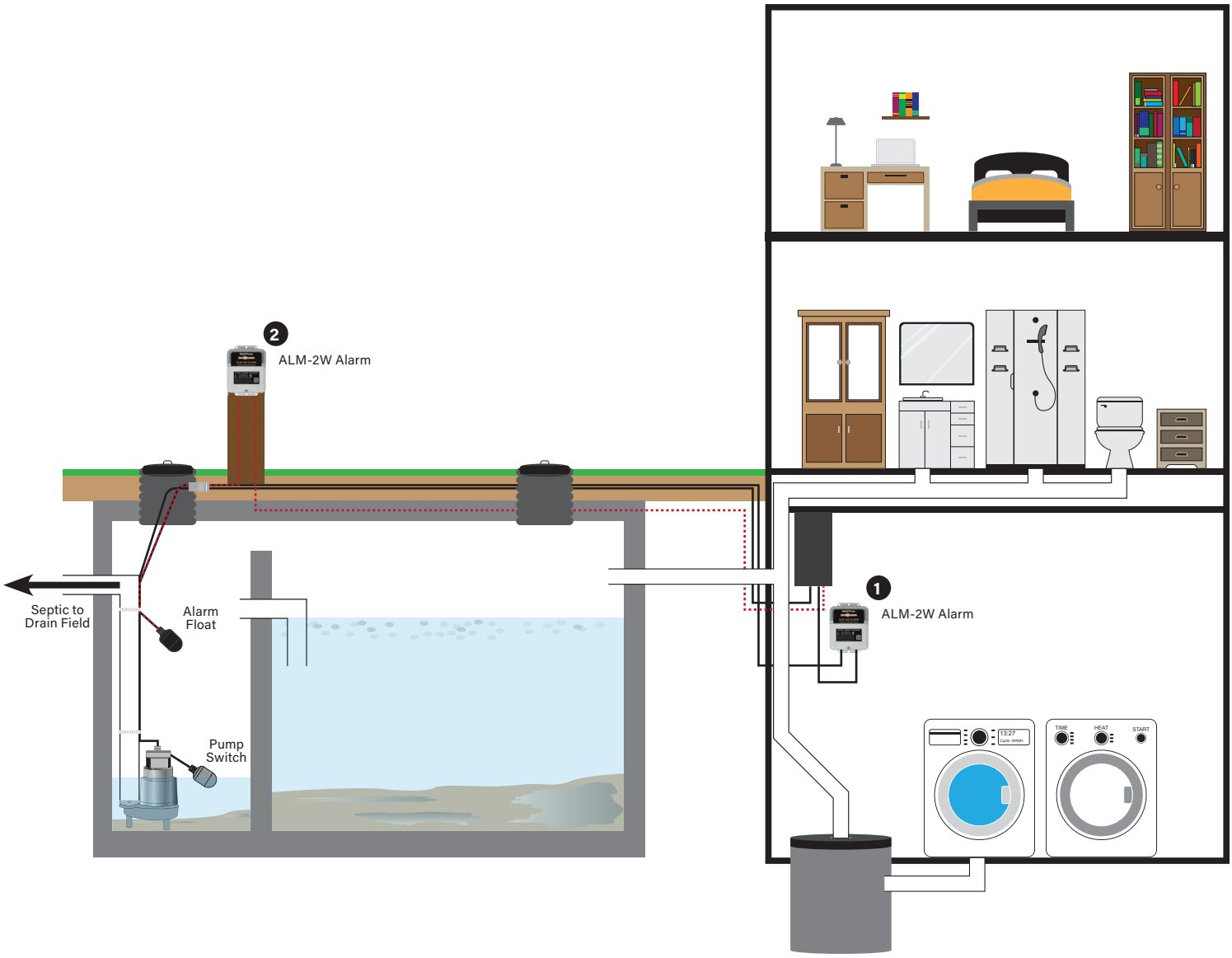


Septic Tank Monitoring

The diagram below shows the typical setup for septic tank monitoring. The ALM-2W alarm panel is shown in two locations to demonstrate the most typical options for septic tank monitoring. The alarm float switch is connected to the sensor input for high water indication. If water level is not high enough to activate the alarm float switch, then the top cover of the enclosure will be green. If the alarm float switch is activated, then the top cover of the enclosure will flash red and the buzzer will annunciate. The alarm condition will stay on until the alarm float switch is deactivated. If the silence pushbutton is pressed during an alarm condition, then the top cover of the enclosure will turn solid red and the buzzer will silence. The silence condition will reset when the alarm float switch deactivates. If the alarm is in silence mode for longer than 24 hours, the alarm will reactivate. If auxiliary contacts are used, they will activate during an alarm condition.

1) Indoor Application - The first option shows the ALM-2W alarm panel mounted in the utility room. The alarm float switch will need splicing for the additional wire length. A second common indoor installation method is mounting the alarm in the garage (not shown).

2) Outdoor Application - The second option is to mount the ALM-2W alarm panel to a post in the ground next to the septic tank. This option would require a shorter alarm float switch cable length and running the power mains out to the alarm.



Troubleshooting

PROBLEM	PROBABLE CAUSE	SOLUTION
Green LED on the enclosure does not turn on during initial setup	Power not applied or power loss	Check to see if alarm is plugged in, have qualified personnel check receptacle with voltmeter and make sure circuit breaker is not tripped
	Green LED turn off feature activated	Check green power LED switch to make sure it is in the on position (up), if off (down), flip the switch up and back to the on position
While using the alarm float switch, the alarm conditions are resuming with an empty tank	Check to see if the float switch is hung up on something	Make sure the float switch is free and the line is tethered at desired location in a secure fashion
	If the float switch is old, the contacts could be stuck shut	Replace the float switch
The alarm float switch is activated, but the red LEDs on the enclosure are solid and the buzzer is not annunciating	The silence pushbutton has been pressed	Deactivate or disconnect the float switch and then reactivate or reconnect the float switch to ensure normal operation resumes
The auxiliary contacts are not activating	If the alarm is not activated, then the auxiliary contacts should also be off	Test the alarm and the auxiliary contacts should work while the alarm is activated

Specifications

Primary Power: 120VAC, 50/60 Hz

Power: 2.64 Watts maximum (alarm condition)

Certifications: FCC Part 15 (US and Canada), CSA (US and Canada)

Auxiliary Contacts: 24VDC at 0.5 Amps maximum

Enclosure Type: 3R

FCC Part 15:

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: increase the separation between the equipment and receiver, connect the equipment into an outlet on a circuit different from that to which the receiver is connected, consult the dealer or an experienced radio/TV technician for help. Caution: changes/modifications not approved by Liberty Pumps could void the user's authority to operate the equipment.

Warranty

Three-year limited warranty.

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Company Information

Company Location: 7000 Apple Tree Avenue, Bergen, NY 14416
Phone: (800) 543-2550
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Website: www.LibertyPumps.com

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