

AgriAlert 400

Alarm System User's Manual



Manufacturer:



Viatron Electronics
5200, Armand-Frappier
St-Hubert (Quebec)
Canada
J3Z 1G5

WARNINGS

The warranty can be void if this product is used in a manner not specified by the manufacturer.

Every effort has been made to ensure that this manual is complete, accurate and up-to-date. The information contained in it is however subject to change without notice due to further developments.

Table of Contents

1.	INSTALLATION	4
1.1	Precautions	4
1.2	Installation Procedure	4
1.3	Mounting the Equipment	5
1.4	Connecting the Equipment	6
1.4.1	Sensors	6
1.4.2	Supply Inputs	6
1.4.2.1	AC Power Connection	6
1.4.2.2	Backup Battery Connection	6
1.4.3	Connecting the Earth Ground	7
1.4.4	Siren Output	7
2.	USER-INTERFACE	8
2.1	Faceplate	8
2.2	Internal Switches	9
3.	CONFIGURING THE ZONES	10
3.1	Enabling/Disabling the Zones	10
3.2	Setting Zone Contacts	10
3.3	Setting the Recognition Time	10
3.4	Setting the Alarm Output Status	10
4.	CONTROLLER'S OPERATION	11
4.1	Cancelling/Acknowledging an Alarm	11
4.2	Activate/Bypass a Zone	11
5.	APPENDIX	12
	Appendix A: Fuse Types	12
	Appendix B: Maximum wire lengths	12
	Appendix C: Backup battery life span	12
6.	TECHNICAL SPECIFICATIONS	13
7.	WIRING DIAGRAM	14

1. INSTALLATION

1.1 Precautions



Read the following instructions completely before connecting or operating the unit. Failure to comply with the instructions in this booklet may result in a malfunction or injury.

The room temperature where the alarm system is located **must always remain between 0°C to 40°C (32°F and 104°F)**.

To avoid exposing the controller to harmful gases or excessive humidity, it is preferable to install it in a corridor.

Do not spray water on the controller!

For Customer Use

Enter below the serial number located on the side of the controller and retain this information for future reference.

Model number: AA-400

Serial number: _____

Date installed: _____

1.2 Installation Procedure

What you need:

- AA-400 system including an independent battery enclosure:
- 12VDC / 7.5AH sealed lead acid battery;
- 16.5VAC/40VA transformer.



To avoid electrical shocks and equipment damage, turn off the breaker on which is connected the unit before configuring the main board or making connections to the terminals.

- **Step 1:** Determine where you want to install the system. You need an unswitched AC power outlet nearby to operate the system.
- **Step 2:** Make a list of all the sensor inputs you will be using with the AA-400 alarm system.
- **Step 3:** Mount the AA-400 alarm system and the battery enclosure on the wall (see section 1.3).
- **Step 4:** Connect a ground wire to the main ground of the system (see section 1.4.3).
- **Step 5:** Hook up the battery and plug the transformer into an AC power outlet (see section 1.4.2).

1.3 Mounting the Equipment

The AA-400 alarm system and the battery box should be mounted on a wall as shown in the figure below. Pull the latch located at the bottom of the boxes to open the enclosures.

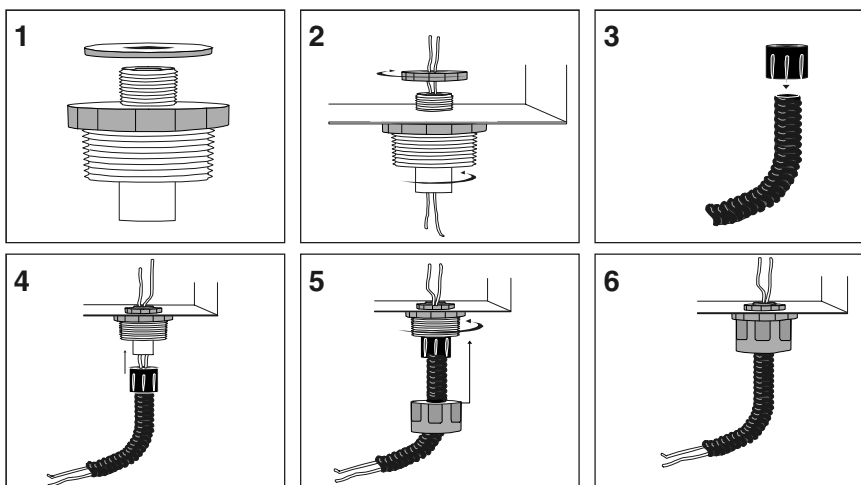
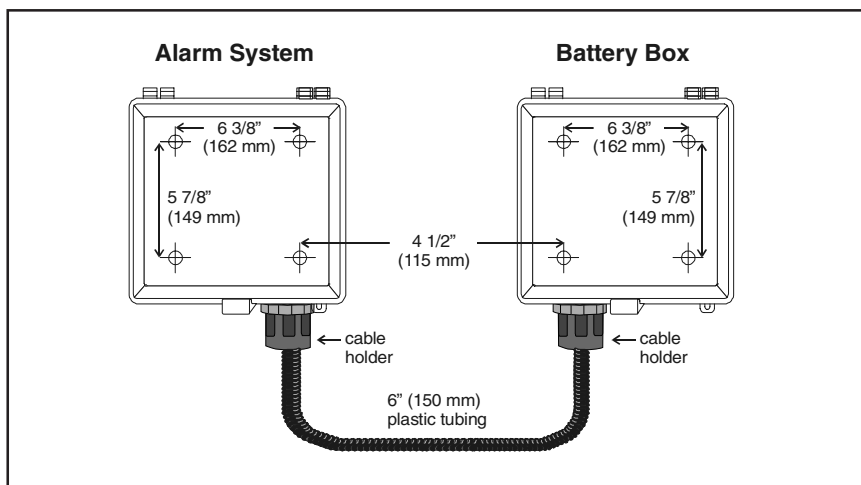
Use 3/16" (4.75 mm) diameter screws to mount each enclosure on the wall. Fasten the black caps onto the mounting holes once the screws are tightened. Make sure the covers of the two boxes can be opened easily.



The battery enclosure has ventilation openings on the sides. Make sure they are not obstructed.

Mount the battery enclosure 4 1/2" (115 mm) from the AA-400 enclosure. Use the plastic tubing provided to run the wires from the battery to the alarm system. These wires are provided with the system. The bare end hooks up to the AA-400 alarm system.

Pass all wiring through the bottom of the enclosure. Do not drill holes on the side or the top of the enclosure as this may allow water to enter the enclosure. Use a hammer and a screwdriver to punch holes through the bottom of the enclosure.



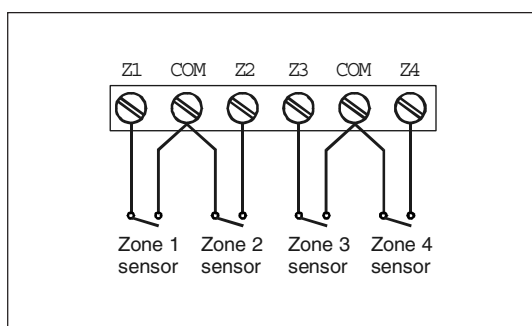
1.4 Connecting the Equipment

When connecting the equipment to the terminals provided on the main board and the extension cards, strip the wires as little as possible (about 1/4" (6 mm)) to avoid electrical shorts. Once the wires are connected, run them through the electrical knockouts provided on the bottom of the AA-400 enclosure and use a cable holder (2 cable holders are provided for the battery connections. You can order additional cable holders from your dealer if needed).

1.4.1 Sensors

The terminals used for sensor inputs are numbered Z1, Z2, Z3 & Z4 on the main board. Connect each sensor to a Z terminal and to its respective ground terminal (COM). Note that each ground terminal is used by two zones; for example, Z1 and Z2 use the same ground.

Make sure each sensor is connected to the proper ground. False alarms can result if the ground wires are not properly connected.



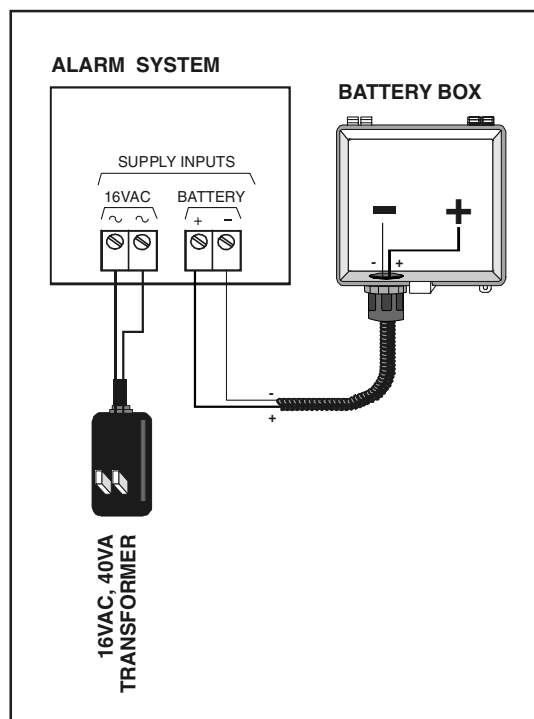
1.4.2 Supply Inputs

1.4.2.1 AC Power Connection

The terminals marked 16 VAC on the main board are used for connecting the transformer. The transformer provided with the system is a 16.5 VAC/40 VA transformer. It must be plugged into a 120 VAC / 60 Hz outlet. The F2 fuse (5A fast blow) is connected to this input. Make sure the power source is unswitched (i.e. there is no switch on the power outlet).

1.4.2.2 Backup Battery Connection

The terminals marked BATT are used for the backup battery. The AA-400 system uses a 12 VDC / 7.5 AH sealed lead acid battery. No other type of battery can be used. The battery wires run through the tube provided, as shown on the graph below. Make sure the positive wire of the battery is connected to the positive terminal. See Appendix C for normal battery life spans.



1.4.3 Connecting the Earth Ground

The earth ground terminal of the AA-400 must be connected to the earth ground as follows.

Use a rod at least 5/8 in (16 mm) in diameter at least 10 ft (3 m) long. The rod must have a clean metal surface free of paint, enamel or other nonconducting substances. Drive the rod at least 10 ft (3 m) into the ground. If the bedrock is more than 47 in (1.2 m) deep, drive the rod into the ground to bedrock level and bury any remainder horizontally at least 2 ft (600 mm) below ground level. If the bedrock is less than 47 in (1.2 m) deep, bury the rod horizontally at least 2 ft (600 mm) below ground level (ref. article 10-702, 3d of the Canadian Electricity Code C22.10-99).

The rod must be connected to the wire described above. It is recommended to let the rod going out of the ground to connect it. The wire length must not exceed 50 ft (15 m).



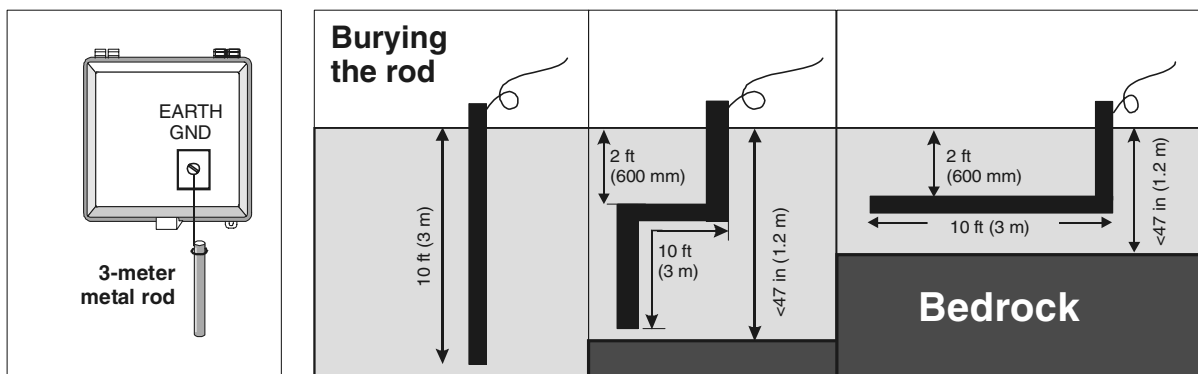
It is extremely important that the earth ground terminal be connected to a proper ground to protect the electronic components from damage due to lightning surges and electrostatic discharges. Do not use the electrical ground for this purpose.



If outdoor connections are used, mount the enclosure as close as possible to the entry point of the outdoor wiring.

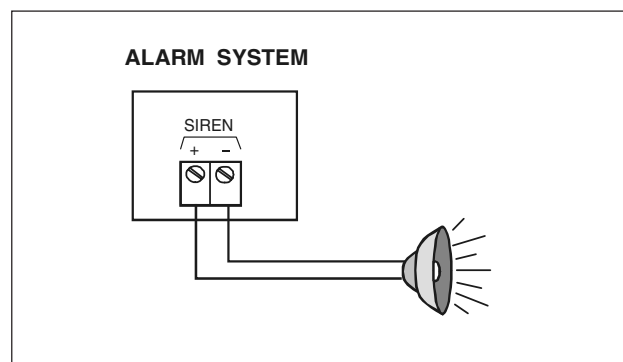


An improper earth ground connection immediately voids the system warranty without further notice.



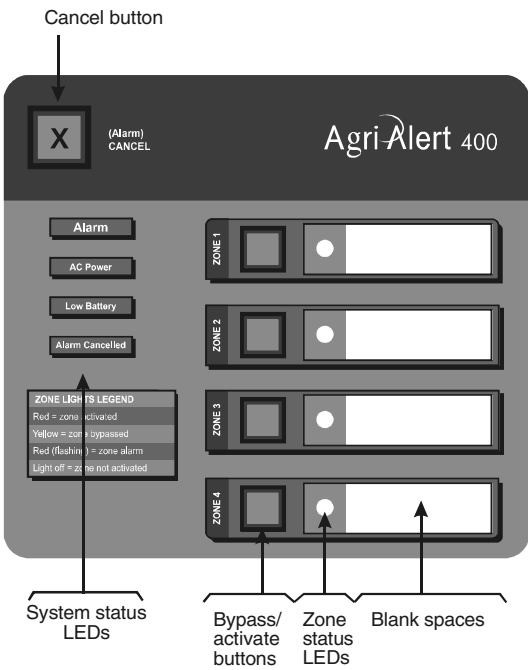
1.4.4 Siren Output

The terminals marked SIREN are for the siren. The voltage supplied is 12 VDC with a maximum current of 1.5 A. Note that the battery must be hooked up if a siren is used. The F5 fuse (2A slow blow) is connected to this output. Make sure the positive wire is connected to the positive terminal of the siren.



2. USER-INTERFACE

2.1 Faceplate



Cancel Button
When an alarm is active, press CANCEL to disable the siren for 15 minutes. Then, take proper actions to correct the alarm situation.

Bypass/Activate Buttons
To stop monitoring a zone, press the bypass button until the zone light turns off ; to reactivate the zone, press the bypass button until the LED turns red (solid or flashing).

Blank spaces
Write down the description of each zone in the spaces provided.

System Status Lights

Status LED	Meaning
Alarm	This LED is lit when an alarm condition is detected.
AC Power	This LED is lit when the device is powered properly.
Low Battery	This LED is lit when the voltage of the backup battery is low. (On first startup, the actual battery status is detected after 1 minute).
Alarm Cancelled	This LED is lit when an alarm is cancelled for 15 minutes with the CANCEL button. It remains lit as long as the alarm condition is present.

Zone Status LEDs

Zone LED	Zone	Zone Status
Red (solid)	Enabled	No alarm.
Yellow	Enabled	The zone is bypassed.
Red (flashing)	Enabled	An alarm is active.
Off	Disabled	Not used.

2.2 Internal Switches

Internal switches are used to configure your AA-400 controller. These switches are located on the main board of the AA-400, inside the enclosure.

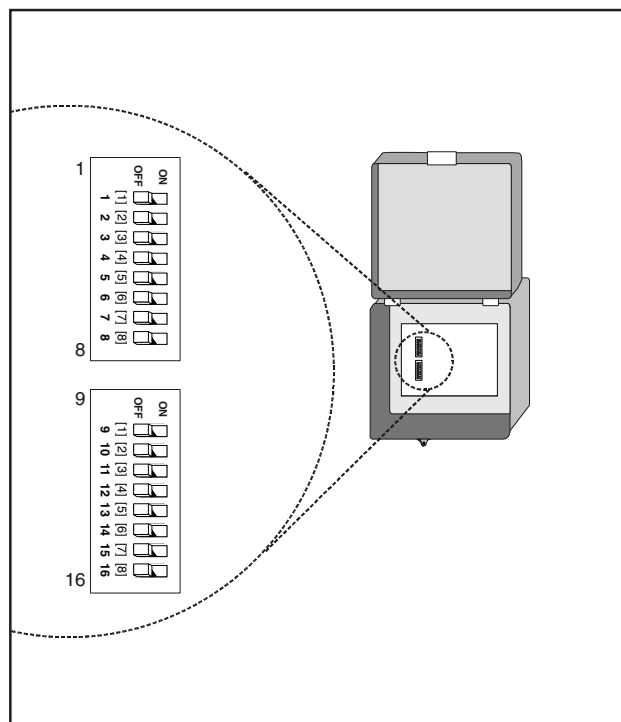
Refer to the table below to set internal switches 1-12 to the appropriate position (please refer to the "Configuring the zones" section of this manual to get further information about the particular function of each switch).



ALWAYS turn off power to the AA-400 before opening the enclosure.



When the alarm system is shipped, all internal switches are set to OFF.



Switch #		OFF	ON
1	ZONE 1	ZONE STATUS: DISABLED	ZONE STATUS: ENABLED
2	ZONE 2		
3	ZONE 3		
4	ZONE 4		
5	ZONE 1	ZONE CONTACT: NORMALLY OPEN	ZONE CONTACT: NORMALLY CLOSED
6	ZONE 2		
7	ZONE 3		
8	ZONE 4		
9	ZONE 1	RECOGNITION TIME: 0 SECOND	RECOGNITION TIME: 30 SECONDS
10	ZONE 2		
11	ZONE 3		
12	ZONE 4		
13	SIREN	ALWAYS ON	INTERMITTENT (ON=10 SEC; OFF=2 MIN)
14-16	RESERVED		

3. CONFIGURING THE ZONES

A zone is an input configured to respond to the type of sensor connected to it. Sensors are installed by the user to detect alarm conditions. In all, the AA-400 can monitor up to 4 different dry contact zone inputs.

3.1 Enabling/Disabling the Zones

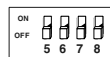
The AA-400 can monitor up to 4 dry contact zone inputs. Set internal switches 1-4 properly to enable or disable the desired number of zones (refer to the table below).



		OFF	ON
1	ZONE 1	DISABLED	ENABLED
2	ZONE 2		
3	ZONE 3		
4	ZONE 4		

3.2 Setting Zone Contacts

Dry contacts can be either normally open (NO) or normally closed (NC) circuits. The AA-400 sets off an alarm when the NO contact of a zone closes or when the NC contact of a zone opens.



Set internal switches 5-8 properly to select the right type of contact of each zone (refer to the table below).

		OFF	ON
5	ZONE 1	NO	NC
6	ZONE 2		
7	ZONE 3		
8	ZONE 4		



If a wireless module (WM-3000Rx) is connected to the AA-400, all zone of the AA-400 must use the same type of contact as for the wireless module.

3.3 Setting the Recognition Time

The recognition time is the time an alarm input must be active before it constitutes a valid alarm condition. It can be set to 0 or to 30 seconds.

Set internal switches 9-12 properly to assign the desired recognition time to each zone (refer to the table below).



If a wireless module (WM-3000Rx) is connected to the AA-400, all zones of the AA-400 must have a recognition time of 0 second.

		OFF	ON
9	ZONE 1	0 SEC.	30 SEC.
10	ZONE 2		
11	ZONE 3		
12	ZONE 4		

3.4 Setting the Alarm Output Status

When an alarm situation occurs, the alarm output can sound permanently or intermittently as follows : 10 seconds ON and 2 minutes OFF.



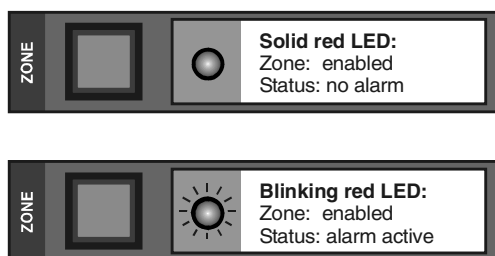
Use internal switch 13 to select how the alarm output must operate (refer to the table below).

	OFF	ON
13	ALWAYS ON	INTERMITTENT (ON=10 SEC; OFF=2 MIN)

4. CONTROLLER'S OPERATION

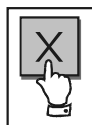
The AA-400 is a monitoring device used to detect alarm conditions. It sets off an alarm when the normally open (NO) contact of a zone closes or when the normally closed (NC) contact of a zone opens.

When an alarm occurs, the AA-400 activates the alarm relay, turns on the "Alarm" status LED and makes the red LED associated with the problematic zone blink rapidly.



4.1 Cancelling/Acknowledging an Alarm

Press **CANCEL** to stop the alarm output for **15 minutes**. In the meantime, try correcting the alarm situation. Once the alarm is cancelled the "Alarm" & "Alarm Cancel" LED stay lit for 15 minutes or up until the alarm situation is corrected.

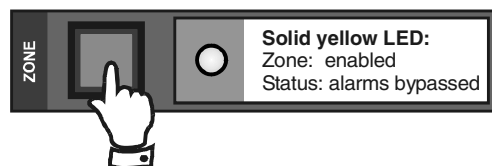


4.2 Activate/Bypass a Zone

The AA-400 can activate or bypass individual zones. When a zone is bypassed, the pilot light associated with it turns yellow and no alarm detection is performed on the zone input; when a zone is active, the pilot light turns red and the AA-400 monitors the zone input. Only the zones that are enabled with internal switches 1-4 can be activated or bypassed.

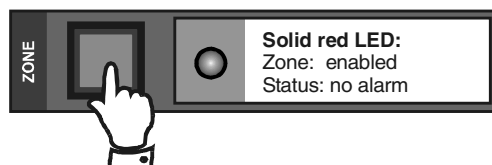
To bypass a zone:

Press the push-button associated with the zone to be bypassed once. The red LED turns yellow, meaning the zone is now bypassed.



To activate a zone:

Press the push-button associated with the zone to be activated once. The yellow LED turns red (solid or blinking), meaning the zone is now activated.



5. APPENDIX

Appendix A: Fuse Types

FUSE NUMBER	FUSE TYPE	FONCTION
F2	5A fast blow, 5 x 20 mm	AC Power Connection
F4	1A fast blow 5 x 20 mm	12 VDC Output
F5	2A slow blow, 5 x 20 mm	Siren Output

Appendix B: Maximum wire lengths

Input Wire Type	Max. Length	Siren / 12VDC Output
16 AWG (Ø 1,29 mm, 1,31 mm ²)	6500 ft (2000 m)	50 m (164 ft)
18 AWG (Ø 1,02 mm, 0,82 mm ²)	4265 ft (1300 m)	30 m (98 ft)
20 AWG (Ø 0,81 mm, 0,52 mm ²)	2624 ft (800 m)	N.A.
22 AWG (Ø 0,64 mm, 0,33 mm ²)	1640 ft (500 m)	N.A.

Appendix C: Backup battery life span

Current (mA)	Temperature	
	0°C (32°F)	20°C (68°F)
350mA minimum charge Siren and 12VCD output not used	17 hours	20 hours
3500mA maximum charge Siren - 1500mA 12VCD - 750mA	1/2 hour	1 hour

6. TECHNICAL SPECIFICATIONS

Type: AA-400

Supply:

Transformer 16.5 VAC, 40 VA, fuse F2-5A fast blow

Battery Rechargeable, sealed, lead-acid, 12V / 7.5 AH

Outputs:

Siren 12VDC, 1.5A max. Fuse F5-2A slow blow

12VDC 750mA DC max. Fuse F4-1A fast blow

Operating temperature 32 to 104 °F (0 to 40 °C). Indoor use only

Pollution degree 2

Installation category 2

Altitude 7900 ft max (2000 meters max)

Humidity 95% max

Cleaning Gentle soap and water

7. WIRING DIAGRAM

