

# Operating & Maintenance Manual

## Alert-4 LCD Ethernet

### Master Alarm



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# User Responsibility

The information contained in this Installation, Operation and Maintenance Manual pertains only to the Alert-4 microprocessor based digital LCD Alarm. This product will perform as described in this manual when assembled, operated, maintained and serviced in accordance with the installation instructions provided.

The alarm must be checked periodically. Parts that are broken, missing, worn, distorted or contaminated must be replaced immediately. Should such repair or replacement become necessary, please contact Amico Corporation or their distributors.

All alarms should not be repaired or altered without prior written or verbal approval from Amico Corporation or its distributors. Failure to comply will void all warranty on the alarm.

Statements in this manual preceded by the words WARNING, CAUTION, DANGER and NOTE are of special significance. Please read these sections carefully.

**NOTE:** Amico strongly recommends that alarms be checked annually by qualified staff.



**WARNING:** denotes steps which can prevent injury.



**CAUTION:** denotes steps which can prevent damage to equipment.



**DANGER:** denotes steps which can prevent electrical shock to equipment or to prevent serious injury and/or death.

## IMPORTANT INFORMATION

1. Do not use impact screw driver for installation.
2. When installation is completed, peel off the LCD screen protector.
3. To protect from static electricity, ensure to discharge body static before installing the Medical Gas Alarm.
4. Do not ground the shield drain wire inside the alarm panel back box.
5. Make sure power supply is turned off while wiring.

# Features

- Microprocessor based digital LCD capable of connecting up to 30 channels
- Ethernet capable for viewing an exact image of the alarm remotely or wireless anywhere in the building
- Adjustable repeat alarm (1, 12, 24 hours or off )
- Maintenance mode available for on site repair
- Self diagnostic circuitry with error display for problem identification
- Dry contacts for remote monitoring from LCD for a generic alarm condition
- Modules are factory mounted on a hinged frame assembly for ease of installation and maintenance
- Alarm conditions can be selected as normally open or normally closed
- The Amico Alert-4 Series Master Alarm supports Internet Explorer, Google Chrome and Safari
- Email and text notification with hyperlink to link back to the alarm panel
- Easy access via Amico App
- Web Audio Enabled: web audio will trigger when alert occurs via ethernet
- Unlimited records of history log to keep track of alert history for easy troubleshooting

# Introduction

The Amico Master LCD Alarm System (Alert-4) incorporates the latest microprocessor based technology for alarm and surveillance systems. The alarm has been designed to provide user flexibility and reliability. This manual shall enable the customer to install, use and maintain the alarm appropriately.

There is one "MUTE" (🔇) or "PUSH TO TEST" button located on the front face of the LCD panel. The button has two functions: to silence an alarm that has occurred and to view the channel terminal ID. When an audible alarm is triggered, press the button to silence the alarm. To view the terminal where the wires are connected, press and hold the button for 20 seconds to display channel terminal ID.

Under normal operation, each group will illuminate in the "GREEN - OK" position. If an alarm condition occurs, the group and channel name will illuminate as "RED" and an audible alarm shall be continuous until silenced by pushing the "MUTE" button.

The LCD Alarm can be connected to a "Building Management System" for a general alarm.

# Description of the Alarm

## SHIPMENT DETAILS

When you receive an Alert-4 LCD Master Alarm from Amico Corporation, the package will consist of two main sections: the Alarm Back Box and the Frame/Module Assembly.

## THE ALARM BACK BOX

The Alarm Back Box contains the auto-switchable System Power Supply with an ON/OFF switch, a built-in fuse and terminal blocks (115 to 220 VAC - 50 to 60 Hz).

## THE FRAME/MODULE ASSEMBLY

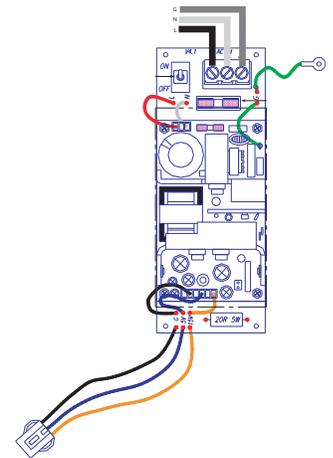
The Frame/Module Assembly consists of the frame and the LCD module. The hinged frame is designed to swing down from the back box to facilitate installation and servicing of the alarm. This design will reduce installation time and eliminate the risk of improper installation since all the modules are connected and tested at the factory.

# Description of Modules

## COMMON TO ALL ALARMS

### SYSTEM POWER SUPPLY

The System Power Supply has been pre-installed into the back box assembly. The System Power Supply converts the AC voltage supply to the alarm into two voltages: 5 VDC (regulated) required by the microprocessor hardware and 15 VDC (unregulated) required by the buzzer and the LCD. This unit also contains the main ON/OFF power switch, the transformer, the heat sink, the main fuse and fuse cover, the rectifying circuitry, the terminal blocks and the low voltage DC power cable for connecting this unit to the module. The System Power Supply can be easily removed and reinstalled by unscrewing it from the back box.



### LCD MODULE

The LCD module contains the LCD screen, microprocessor, Ethernet capable for convenient viewing remotely or wirelessly, anywhere in the building. Email and Text notification enable, Monitor up to 30 channels. Alarm conditions can be selected as normally open or normally closed. Maintenance mode for easy troubleshooting, repeat alarm function, channels can be grouped together or separated using Amico Master Configuration software. Generic dry contact for remote monitoring, adjustable buzzer volume and brightness. "MUTE" button to silence an alarm, push and hold for 20 second and the display will show the terminal port for each channel. LCD Master Alarm is Ethernet ready for use with Internet Explorer, Google Chrome and Safari.



### For Annual Test

- **Hold the MUTE button for twenty (20) seconds to display the channel ID and audio**

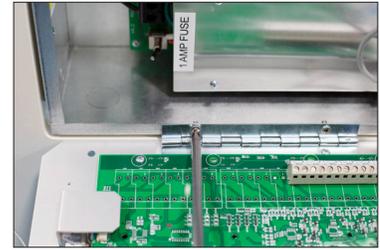
# Installation Guide

## STEP 1: THE ALARM BOX

Install the back-box to the studs of the wall at the desired height. Ensure that the box is securely in place. The mounting brackets are adjustable to suit the thickness of the wall. **MAKE SURE** the box is parallel, squared and flush with the finished wall surface to ensure that the frame assembly will fit properly.

## STEP 2: FRAME ASSEMBLY

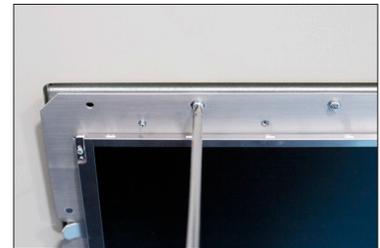
- i. Attach the LCD screen to the back box assembly by using flat head screws (provided with frame in a plastic bag).



- ii. Attach the frame wire with 2 dome head screws (provided with frame in a plastic bag). This will allow the frame assembly and back box to be fastened securely together.



- iii. Close the LCD screen with a back box by tightening two screws provided with divider plate.



- iv. Loosen the screws from the sides frame section (2 screws provided).



- v. Cover the frame and tighten the side screws.



**CAUTION:** Do not use impact driller or screwdrivers when assembling new frame.

# Installation Guide



## CAUTION:

1. The microprocessor circuitry on the Alert-4 alarm contains sophisticated integrated semiconductors. **DO NOT TOUCH** any of the components on the board. Static discharge can cause the modules to malfunction or become damaged.
2. Keep the shield drain wires as short as possible and taped to prevent from grounding, so they can not touch the front panel circuit board when front panel is closed.

## STEP 3: SYSTEM POWER SUPPLY



**CAUTION:** TURN OFF THE POWER SWITCH before changing any modules and/or disconnecting any cables. Failure to do so can cause the fuse to blow, damaging the circuitry.

1. Ensure that the ON/OFF switch is in the OFF position.
2. Through the top left side of the back-box, bring in the AC power wires. Knockouts are provided for making conduit connections to the box. All wiring is to be installed according to local and national codes.
3. Connect the AC power to the terminal blocks as shown in the wiring diagram (Appendix B).
4. Verify that power has been switched off prior to working on the alarm.
5. Risk of electric shock. Disconnect power at circuit breaker before removing power supply shield.

## CONNECTING

- i. Connect a #22 gauge stranded, shielded twisted pair cable ONLY from the junction box to the back box assembly. Knockouts are provided throughout the alarm back box. Up to 10,000 feet [3048 m] of #22 gauge stranded, shielded and twisted pair cable should be used.
- ii. Connect the red wire from the cable to the terminal on the display module marked "+". Connect the black wire to terminal "-" as shown in the wiring diagram (see Appendix A).
- iii. Repeat the above procedures with the remaining point modules using the wiring diagram.

**NOTE:** #22 gauge stranded, shielded twisted pair cable ONLY must be used, up to a distance of 10,000 ft [3048 m].

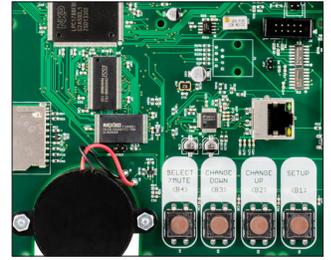
## DRY CONTACTS

If the dry contacts for a generic alarm are to be used for remote monitoring, connect the wires to the appropriate terminals: COM (Common), NO (Normally Open) or NC (Normally Closed), using the diagram in Appendix A. See Appendix D for contact rating.

# Installation Guide

## STEP 4: LCD DISPLAY SETUP

- i. Press the Setup button (B1) and press the Select button (B4)
- ii. Select the language (B1) and press Select (B4) to choose the language
- iii. Select the volume level: 90, 80, 70, 60 – press CHANGE UP/DOWN to change level
- iv. Select the LCD brightness - press CHANGE UP/DOWN to change brightness
- v. Select Maintenance ( Enable or Disable ) -press CHANGE UP/DOWN to change \* for trouble shooting purpose only\*
- vi. Select Repeat Alarm ( 1 ,12 ,24 hours or disable )- press CHANGE UP/DOWN to change
- vii. Select DST (Day light saving) (ON/OFF) - press CHANGE UP/DOWN to change
- viii. Select the DATE (YEAR/MONTH/DAY)- press CHANGE UP/DOWN to change
- ix. Select Time (HR/MIN) - press CHANGE UP/DOWN to change
- x. Press the Select button (B4) to complete Setup



**NOTE:** Hold the “MUTE” button for twenty (20) seconds to display Channel ID.

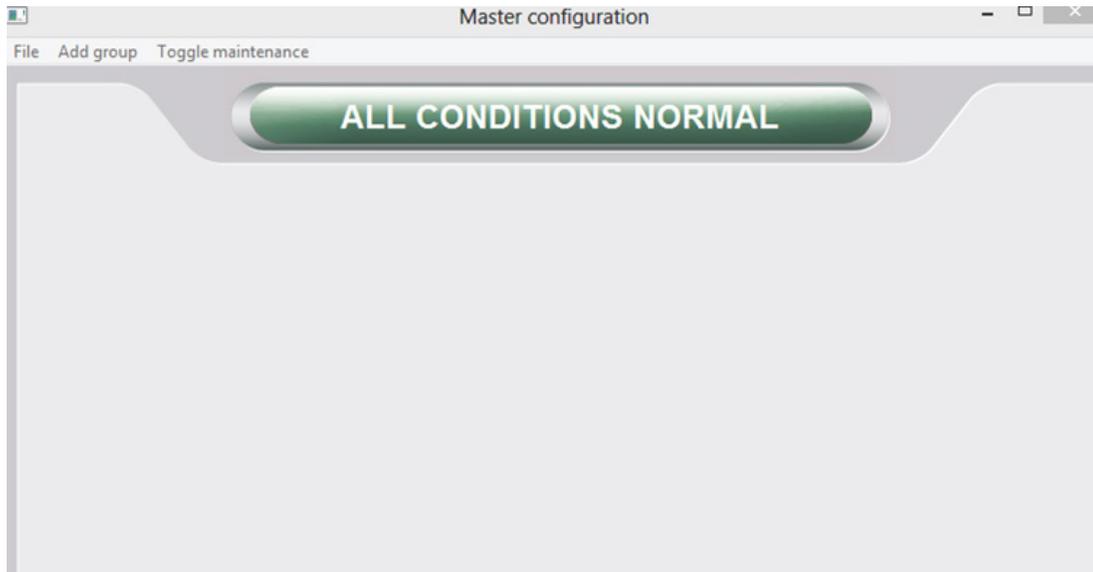
**NOTE:** Press the Setup button (B1) in order to make corrections/go back.

# Configuration Guide

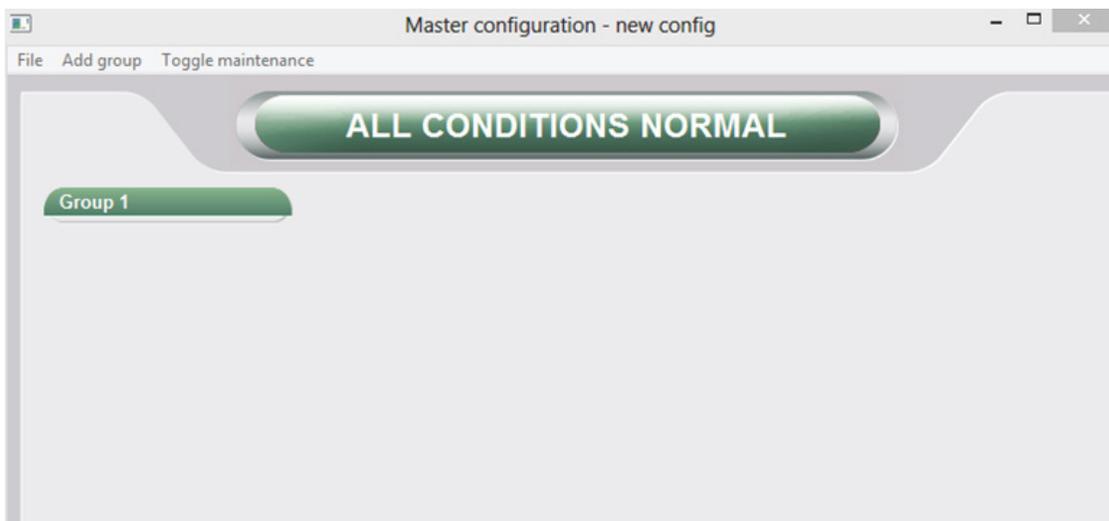
## AMICO LCD ALERT-4: MASTER ALARM CONFIGURATION

The module allows up to 16 characters per line. To configure the alarm channels, perform the following steps:

1. Open the Master Configuration program provided by Amico Corporation on the SD card.

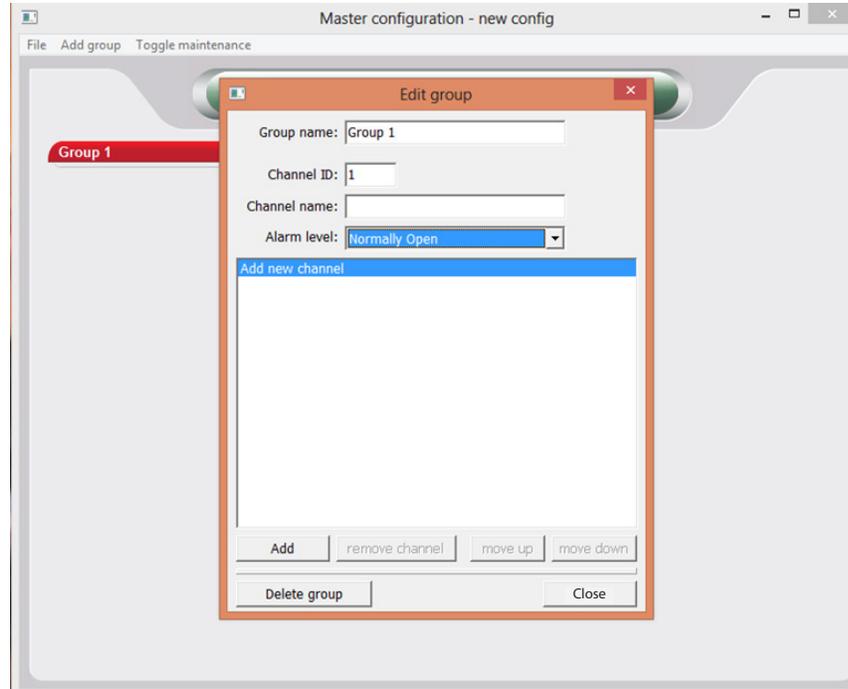


2. Click "File" located at the top left corner. Then click "Start New Config." Then click "Add Group".

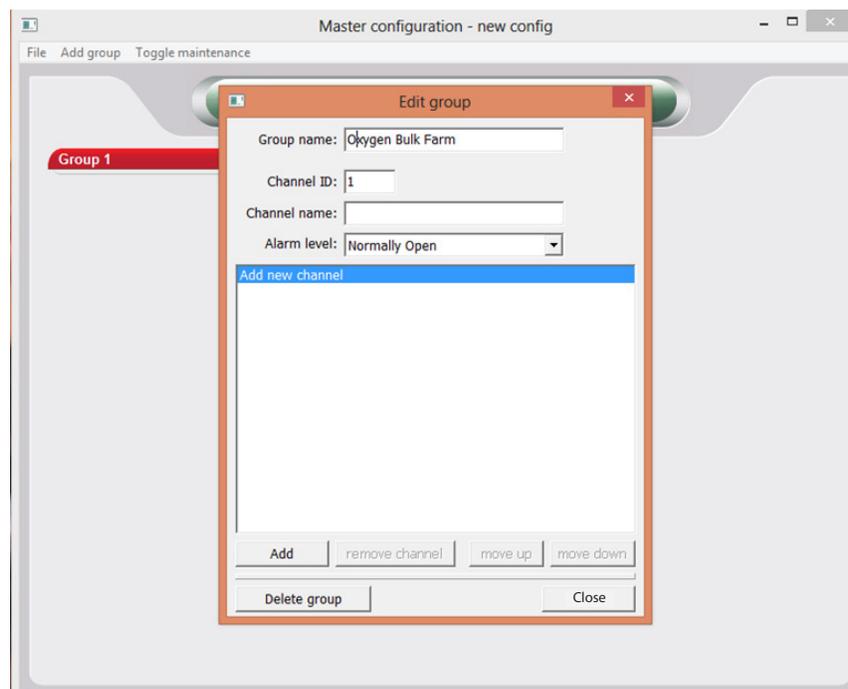


# Configuration Guide

3. Double click on the “Group 1” column. The “Edit Group” window will pop up.



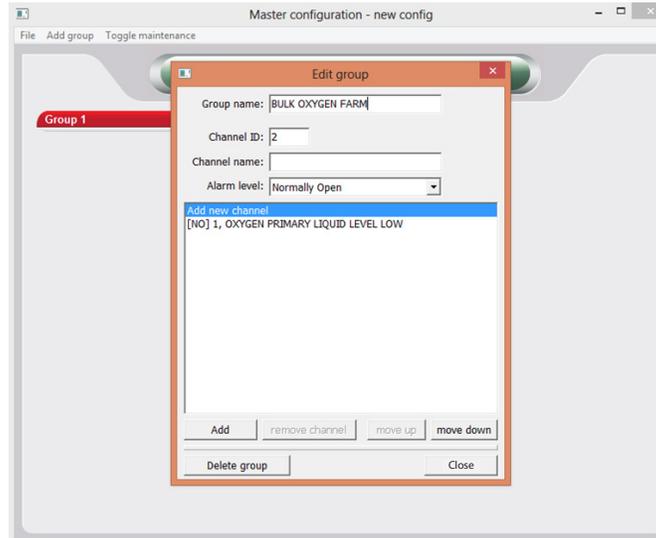
4. Under “Group Name,” identify the medical gas source supply (e.g. Oxygen Bulk Farm).



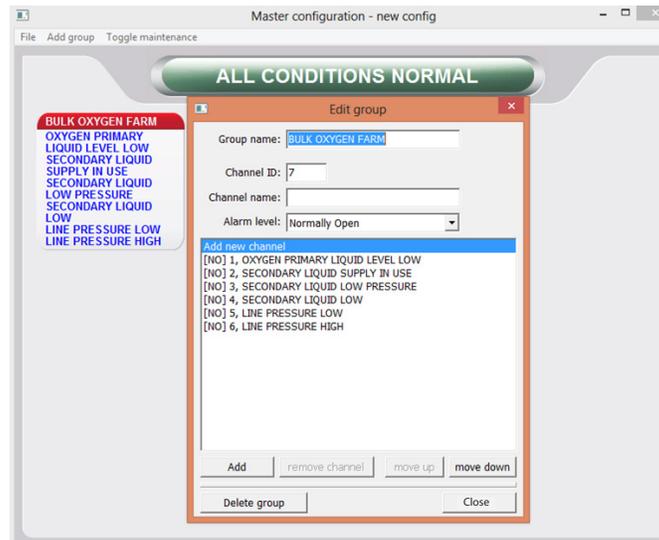
# Configuration Guide

## CHANNEL NAME AND ALARM CONDITIONS

1. Under the "Channel Name" column, identify the channel name and click the "Add" button to add channels (e.g. Oxygen Primary Liquid Level Low). To set alarm conditions for a normally open or closed circuit, click the drop down arrow to change alarm conditions.

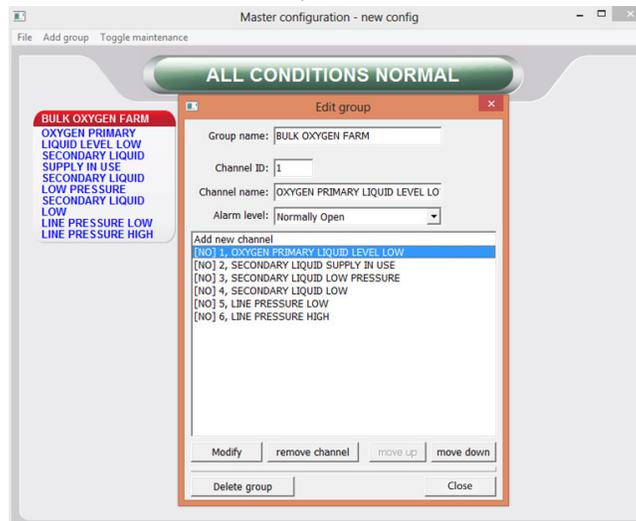


- a. To modify the Group Name, double click to open the "Edit Group" window. Revise the group name then click "Close".



# Configuration Guide

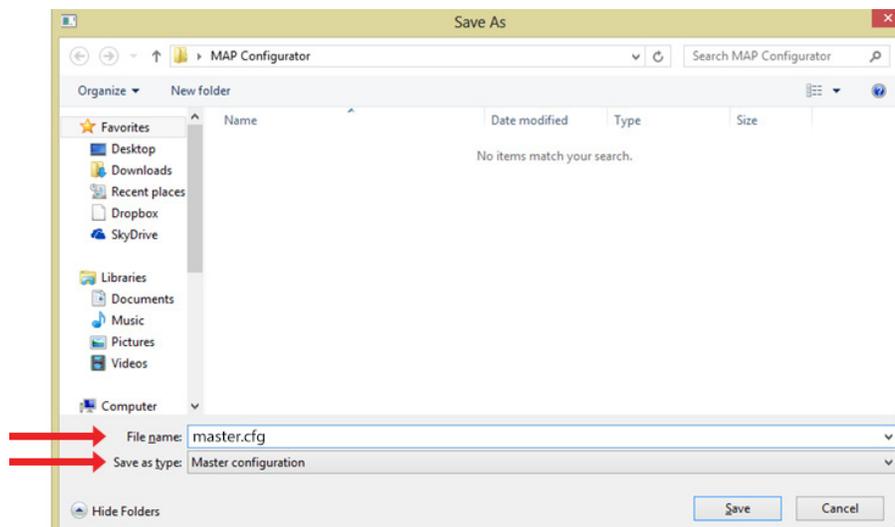
- b. To modify the Channel Name, double click to open the “Edit Group” window. Click the channel you want to revise then revise the channel name. Click “Modify” then click “Close”.



2. Click the “Close” button to complete each group.



3. Save the Configuration file to the SD Card. The file name must be saved as master.cfg in the “Master Configuration” file type.



4. To load the configuration file into the master alarm, follow the instructions under “Installation Guide” on page 16 of this manual.

# Configuration Guide

## NETWORK SETUP



**CAUTION:** Have the information systems personal set up the network interface. Before making any changes to the network setting notify information systems personals.

## EQUIPMENT NEEDED TO SETUP THE NETWORK

- PC with Ethernet connection
- PC with web browser, (Internet Explorer, Google Chrome, Safari)
- CAT 5 Ethernet cable ( Straight-Through)
- SD Card (1GB preferable)

## SETUP

- Connect Alert-4 Master Alarm to an Ethernet switch using a CAT 5 Ethernet cable
- For direct connection to PC, connect the Master Alarm to PC using Cat-5 Ethernet cable

**NOTE:** It is best to use a switch instead of a hub because the device communicates at 10 Mbps. A switch is better able to support this speed, improves network performance and keeps unnecessary traffic from being routed to the alarm.

- Amico Alert-4 Master Alarm will be set to factory default setting. The IP Address, Subnet Mask and Gateway will be set as follows:

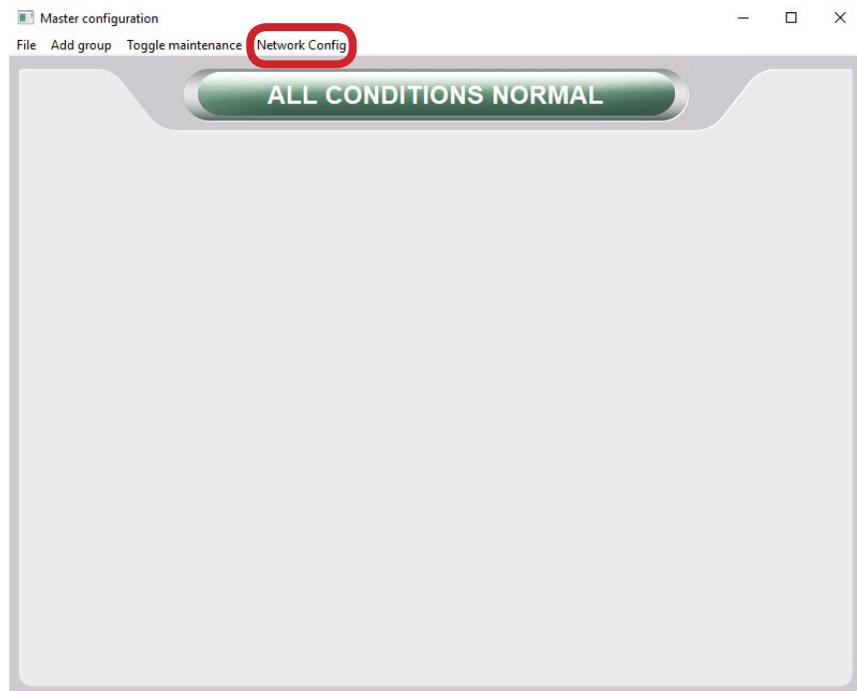
IP address:	192.168.1.100
Gateway:	192.168.1.1
Subnet Mask:	255.255.255.0

- Static IP configuration needs to be used to connect to the Hospital Network
- Upon power-up, the device will immediately begin using the static IP configuration
- Each alarm requires a different IP address to connect to the network
- Verify the green "LINK" LED illuminates at the Ethernet Port

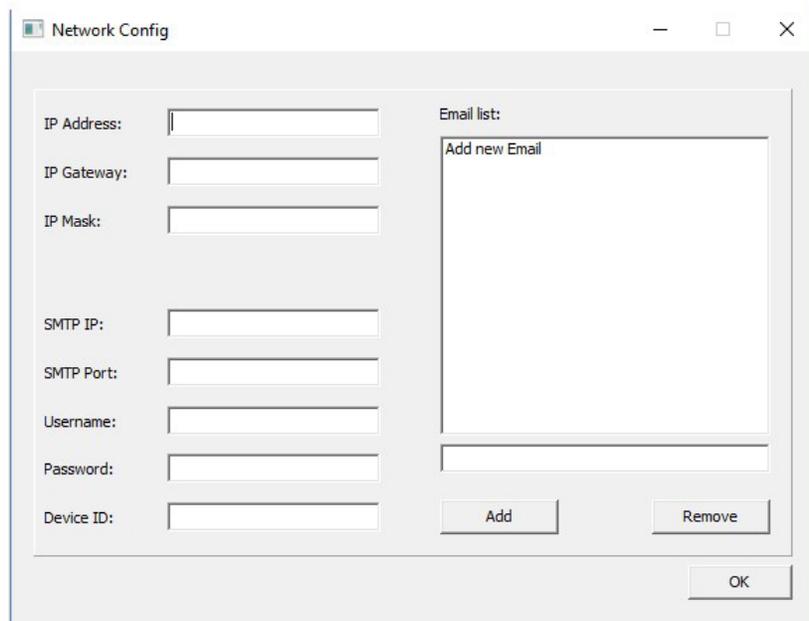
# Configuration Guide

## ASSIGN AN IP ADDRESS

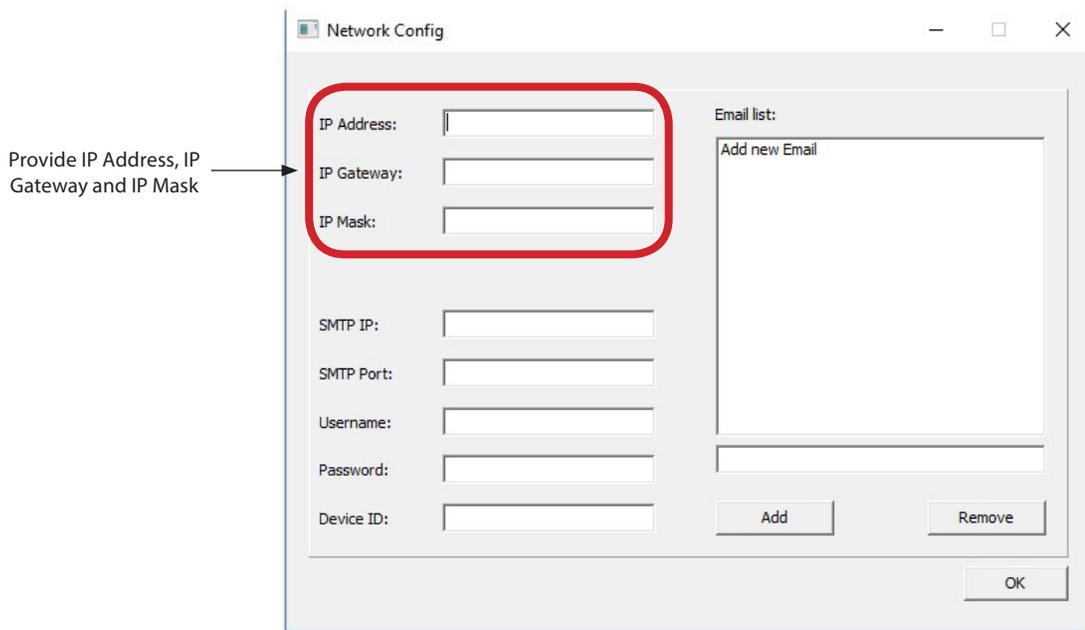
Click the Network Config to assign network parameters and set up email and text notification using master configuration program provided by Amico Corporation on the SD card.



Provide network parameters and click OK to Save. Network file with provided network parameters will automatically generate in the SD card.



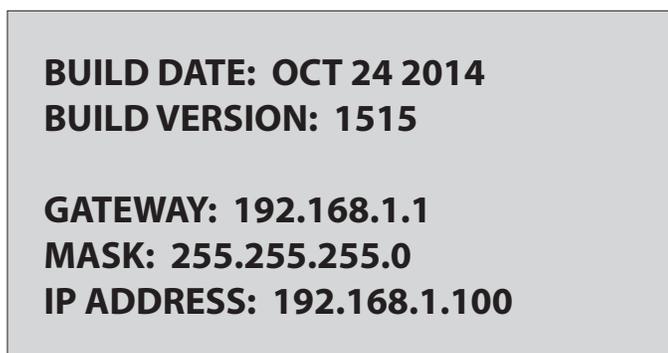
# Configuration Guide



To upload network parameters to the alarm panel ,Insert the SD card into the SD card Slot on the LCD Alarm board (Refer to Appendix A).

To load the channel name configuration file and the network configuration file, press and hold the Setup button and the Reset button at the same time for two seconds; then let go of the Reset button while still holding down the Setup button, until the new channel name configuration file and network configuration file are uploaded to the Master Alarm.

When loading is completed, the screen will display the new channel name configuration and new network configuration, as shown below:



If the configured information does not appear on the screen, repeat the steps above. If the problem persists, contact Amico Corporation for further assistance.

- Once the information is visible on the LCD Alarm screen, leave the SD Card in the slot for approximately 1 minute in order for the information to be completely uploaded onto the alarm, and then proceed to remove the card.
- Once the card has been removed, restart the LCD Alarm to ensure that the configured network setting have been saved onto the LCD Alarm.

# Configuration Guide

## CONNECTING TO ALARM

- Start the web browser (Internet Explorer, Google Chrome, Safari)
- Enter the device IP address eg: (http://192.168.1.1xx) in the browser's address bar\*.

**NOTE:** To find Alarm IP Address, press reset button on the back of the Alert-4 Master Alarm. IP Address will be displayed on the screen.

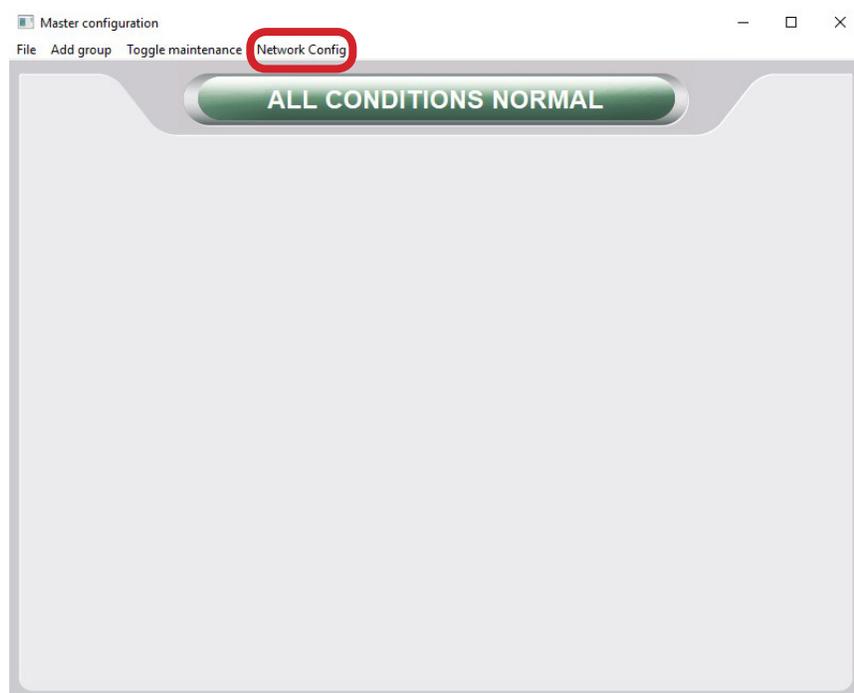
## EMAIL SETUP

**CAUTION:** Have the information system personnel setup the email interface. Notify information systems personnel before making any changes to the network settings.

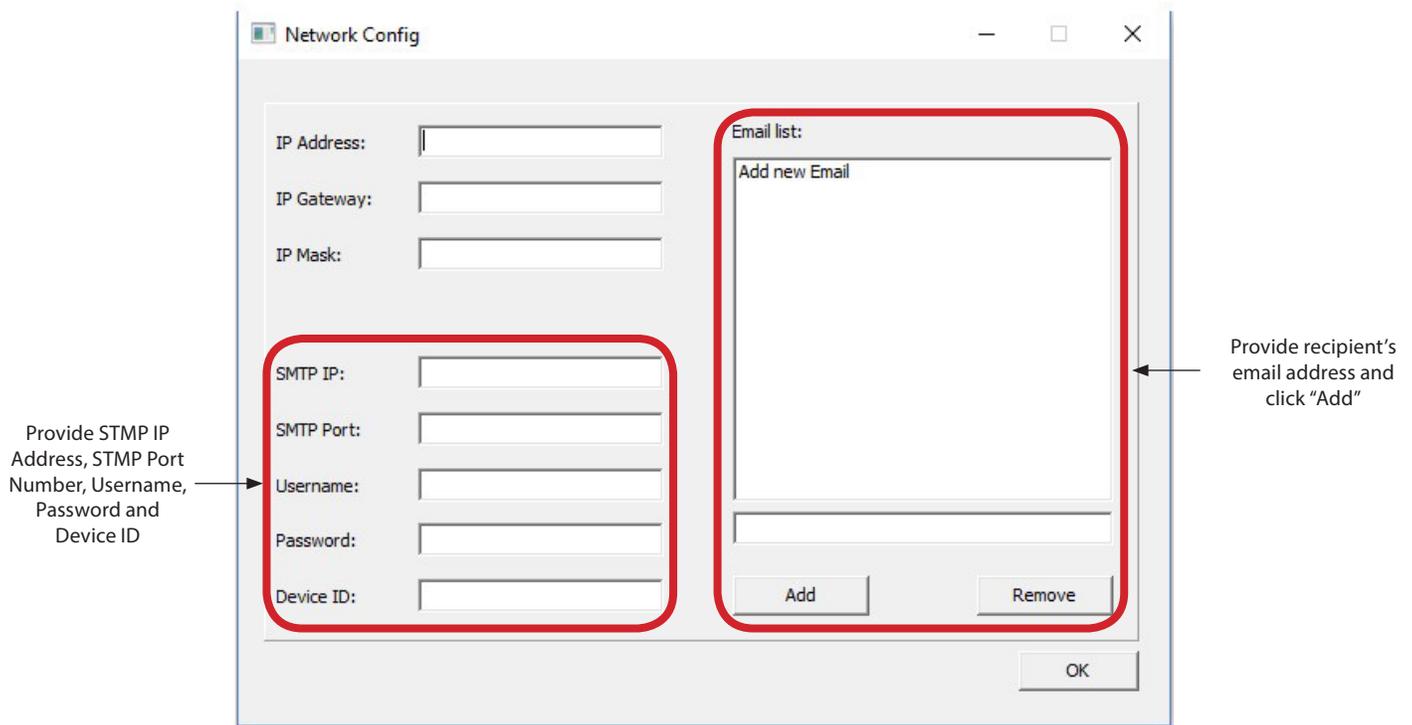
SMTP server is required for electronic mail service.

The following parameters are needed to activate email service. Information system personnel will be able to provide the necessary parameters.

Click the Network Config to set up email and text notification.



# Configuration Guide



**NOTE:** Click OK to save, network file with STMP parameters will automatically generate in the SD card.

IP\_SMTP= (provide SMTP server IP address)  
SMTP\_PORT= (provide SMTP port number)  
SMTP\_USER= (provide SMTP user name)  
SMTP\_PASSWORD= (provide SMTP password)  
EMAIL= (provide recipient email address)  
DEVICE\_ID= (location where device is installed)

To load the Network configuration, press and hold the Setup and Reset buttons at the same time for two seconds. Let go of the Reset button while still holding the Setup button until the new configuration is uploaded to the panel. When parameters are uploaded, the panel will display the new parameters in boot sequence.



**CAUTION:** When wiring source equipment to the panel, make sure that the CAT 5 cable is unplugged or turn off the panel before wiring. If the panel is connected to the mail server it will start sending email while wiring the terminals to the recipients.

**NOTE:** IP address has to be routable if connecting to the alarm panel to the global network.

SMTP Security: Alert-4 panel will require **Plain Text Authentication**. It is required to have the transport layer security and basic authentication only after stating TLS and anonymos users.

# Configuration Guide

## TEXT SETUP



**CAUTION:** Have the information system personnel setup the email interface. Notify information systems personnel before making any changes to the network setting.

SMTP server is required for electronic text service.

The following parameters are needed to activate the text service. Information systems personnel will be able to provide the necessary parameters.

**IP\_SMTP=** (provide SMTP server IP address)

**SMTP\_PORT=** (provide SMTP port number)

**SMTP\_USER=** (provide SMTP user name)

**SMTP\_PASSWORD=** (provide SMTP password)

**EMAIL=** (provide recipient phone number and SMS gateway address, e.g., phonenumber@txt.bell.ca)

**DEVICE\_ID=** (location where device is installed)



**CAUTION:** When wiring source equipment or gas sensors to the panel, make sure that the CAT 5 cable is unplugged or turn off the panel before wiring. If the panel is connected to the mail server it will send email while wiring the terminals to the recipients.

**NOTE:** SMTP Security: Alert-4 panel will require **Plain Text Authentication**. It is required to have the transport layer security and basic authentication only after stating TLS and anonymous users.

Provide recipient's phone number and SMS gateway address e.g., phone number@txt.bell.ca and click "Add"

# Amico Mobile Eco System App

Amico is pleased to introduce the latest technology for monitoring the Medical Gas System of a hospital on a mobile phone. This App allows facilities to monitor the pipeline equipment in real time on an iPhone or Android phones.

The App will provide an exact and instant visual representation of the equipment in alarm condition, thereby eliminating the need for nurses to call maintenance personnel in the event of a gas outage. The App will also help maintenance personnel to localize the outage for a quicker resolution.



**AMICO MOBILE ECO SYSTEM APP**  
Download Now!

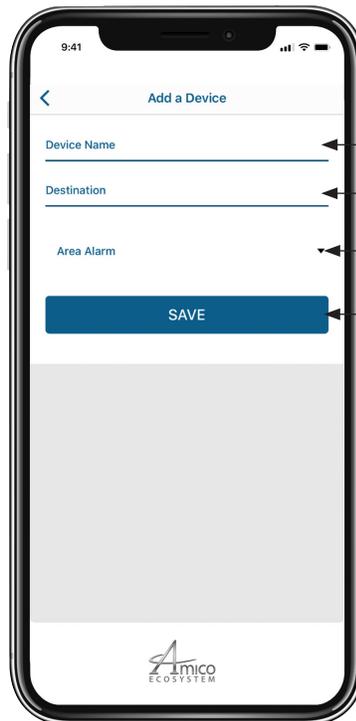


**NOTE:** If Alert-4 alarms are given with local IP address, the phone must be connected to local WiFi before connecting the app to the Alert-4 alarm. If Alert-4 alarm is given with global IP address, connecting the phone to local WiFi is not needed.

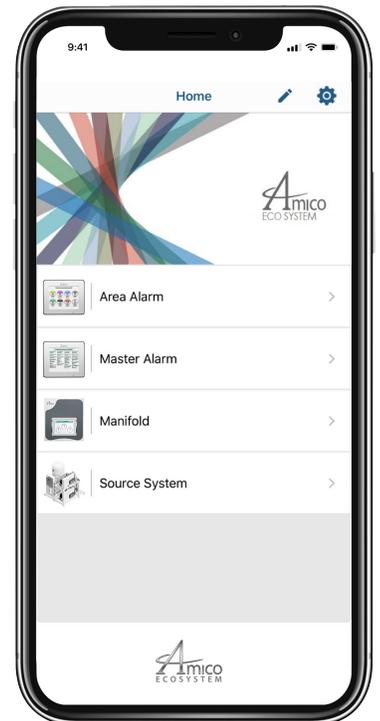
Click and open Amico mobile eco system app on the phones



Home Screen



Add a Device Screen



Home Screen with Devices Added

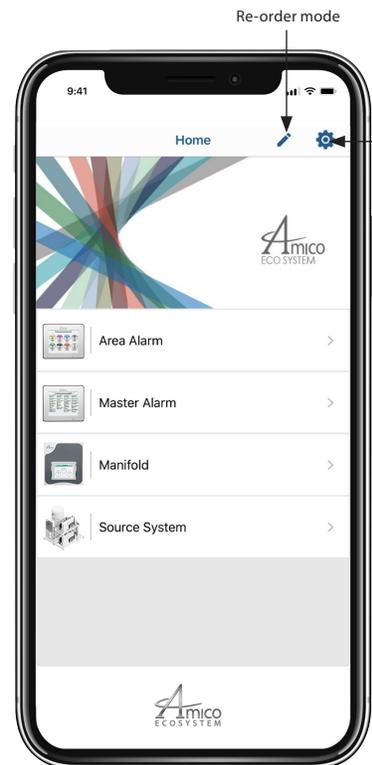
# Amico Mobile Eco System App



Display Exact Image of the Alarm



Device Manual



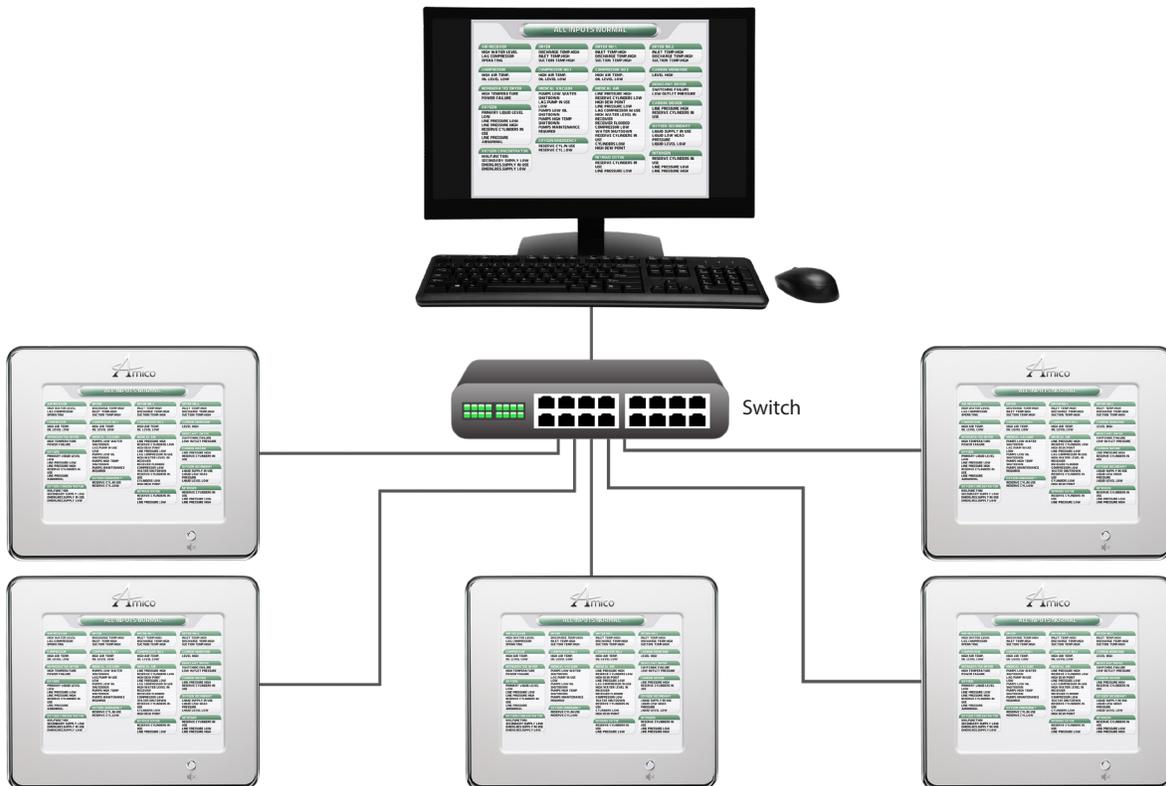
Press and hold the device screen to move the device

# Network Diagrams

## DIRECT CONNECTION

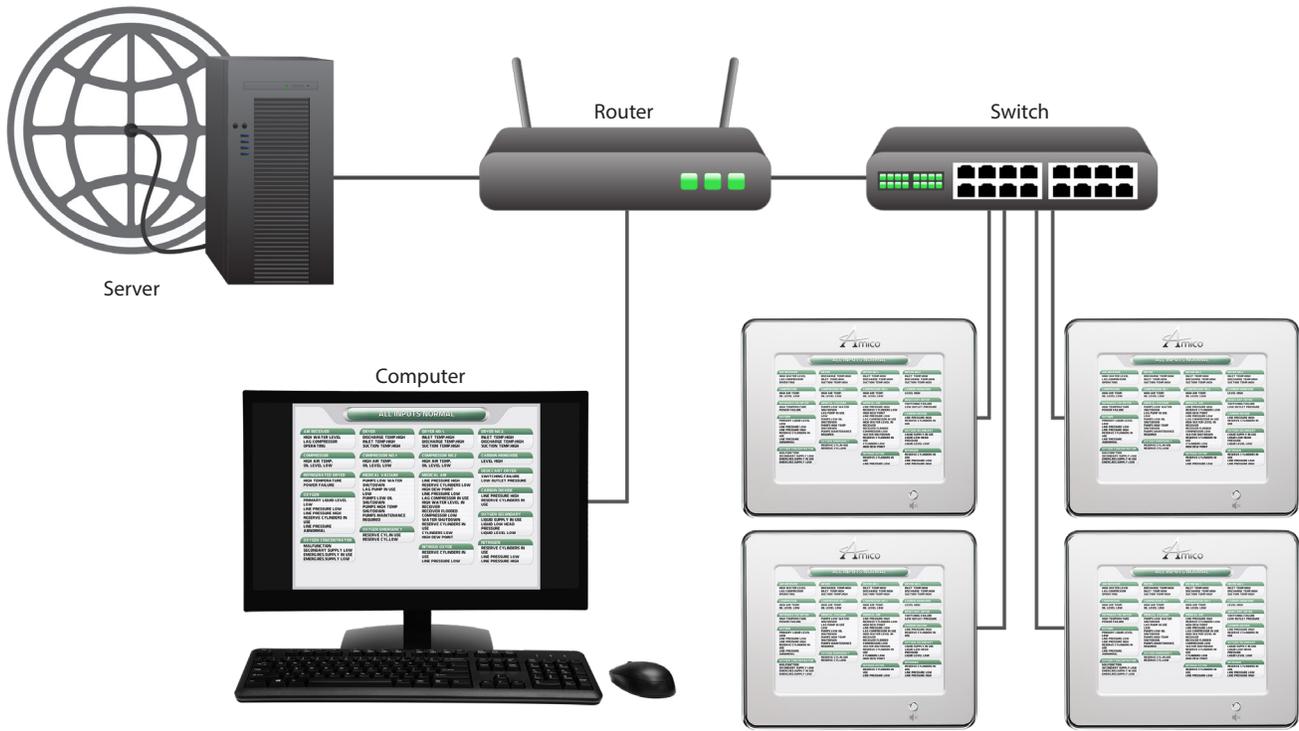


## SIMPLE UNMANAGED NETWORK



# Network Diagrams

## COMPLEX MANAGED NETWORK



## Recorded History Log

Must leave the SD card in the SD card slot to record the logs. Panel will automatically log the track of alerts with date and time provided.

1. To view the logs
2. Remove the SD card from the SD card slot.
3. Plug the SD card to a PC card reader and open the SD card.
4. Open the file called "ERROR" by double clicking
5. File will displays history logs.

Saved postmortem data:

[27/08/2019, 11:33:30] The device started  
RESET CAUSED BY: Reset button, Lockup,

Saved postmortem data:

[27/08/2019, 11:34:02] Alarm condition TRIGGERED  
[27/08/2019, 11:34:32] Alarm condition CLEARED  
[27/08/2019, 11:35:01] Alarm condition TRIGGERED  
[27/08/2019, 11:35:36] Alarm condition CLEARED

Channel 1: OXYGEN: OXY LINE PRESSURE HIGH  
Channel 1: OXYGEN: OXY LINE PRESSURE HIGH  
Channel 2: OXYGEN: OXY LINE PRESSURE LOW  
Channel 2: OXYGEN: OXY LINE PRESSURE LOW

# Web Audio

When an alert occurs, the PC audio that is monitoring will turn on automatically. To Mute the audio, click the mute button on the web page. If the PC audio doesn't turn on automatically, click mute and re-activate the alert to turn PC Audio ON.

The image shows a web-based alarm panel interface. At the top, a green banner displays "ALL INPUTS NORMAL". To the right of this banner is a blue button labeled "Mute Alarm", which is highlighted with a red circle. Below the banner, the panel is organized into a grid of 20 individual alert boxes, each with a green header and white text. The alerts are as follows:

- AIR RECEIVER**: HIGH WATER LEVEL, LAG COMPRESSOR OPERATING
- COMPRESSOR**: HIGH AIR TEMP., OIL LEVEL LOW
- REFRIGERATED DRYER**: HIGH TEMPERATURE, POWER FAILURE
- OXYGEN**: PRIMARY LIQUID LEVEL LOW, LINE PRESSURE LOW, LINE PRESSURE HIGH, RESERVE CYLINDERS IN USE, LINE PRESSURE ABNORMAL
- OXYGEN CONCENTRATOR**: MALFUNCTION, SECONDARY SUPPLY LOW, EMERG.RES.SUPPLY IN USE, EMERG.RES.SUPPLY LOW
- DRYER**: DISCHARGE TEMP.HIGH, INLET TEMP.HIGH, SUCTION TEMP.HIGH
- COMPRESSOR NO.1**: HIGH AIR TEMP., OIL LEVEL LOW
- MEDICAL VACUUM**: PUMPS LOW WATER SHUTDOWN, LAG PUMP IN USE LOW, PUMPS LOW OIL SHUTDOWN, PUMPS HIGH TEMP SHUTDOWN, PUMPS MAINTENANCE REQUIRED
- OXYGEN EMERGENCY**: RESERVE CYL.IN USE, RESERVE CYL.LOW
- DRYER NO.1.**: INLET TEMP.HIGH, DISCHARGE TEMP.HIGH, SUCTION TEMP.HIGH
- COMPRESSOR NO.2**: HIGH AIR TEMP., OIL LEVEL LOW
- MEDICAL AIR**: LINE PRESSURE HIGH, RESERVE CYLINDERS LOW, HIGH DEW POINT, LINE PRESSURE LOW, LAG COMPRESSOR IN USE, HIGH WATER LEVEL IN RECEIVER, RECEIVER FLOODED, COMPRESSOR LOW, WATER SHUTDOWN, RESERVE CYLINDERS IN USE, CYLINDERS LOW, HIGH DEW POINT
- NITROUS OXYDE**: RESERVE CYLINDERS IN USE, LINE PRESSURE LOW
- DRYER NO.2.**: INLET TEMP.HIGH, DISCHARGE TEMP.HIGH, SUCTION TEMP.HIGH
- CARBON MONOXIDE**: LEVEL HIGH
- DESICCANT DRYER**: SWITCHING FAILURE, LOW OUTLET PRESSURE
- CARBON DIOXIDE**: LINE PRESSURE HIGH, RESERVE CYLINDERS IN USE
- OXYGEN SECONDARY**: LIQUID SUPPLY IN USE, LIQUID LOW HEAD, PRESSURE, LIQUID LEVEL LOW
- NITROGEN**: RESERVE CYLINDERS IN USE, LINE PRESSURE LOW, LINE PRESSURE HIGH

**Note:** By muting the audio in the web page doesn't not silence audio at the alarm panel. To silence press mute button at the panel.

# Spare Part Numbers

## ACCESSORIES/MISCELLANEOUS

Model Number	Description
A2P-POWER-V2	Power Supply Module Alert-2
A3X-BOX-3LCD	Alarm Back Box Assembly 3-Station Alert-2
A4M-MASTER-FRAME	Master Alarm Frame Assembly for Alert-4 Ethernet
A3P-RIBBON-CABLE	Ribbon Cable 3" long
A3X-A-TERM-LAB30	Terminal Block Label 30 points
A3X-X-FRM-PLT-LCD	LCD Alarm Frame

## Maintenance Mode

### FACTORY DEFAULT – DISABLED

The Maintenance Mode is used to allow hospital personnel to identify loose wiring or faulty source equipment. By enabling the Maintenance Mode any alarms received, even transient ones, will be latched-on so that the maintenance personnel can identify the source of the problem.

### TO ENABLE OR DISABLE MAINTENANCE MODE:

- Press the Setup button and select the Maintenance Mode by pressing the B4 button
- Use the Up and Down buttons to activate the Maintenance Mode to either Enable or Disable

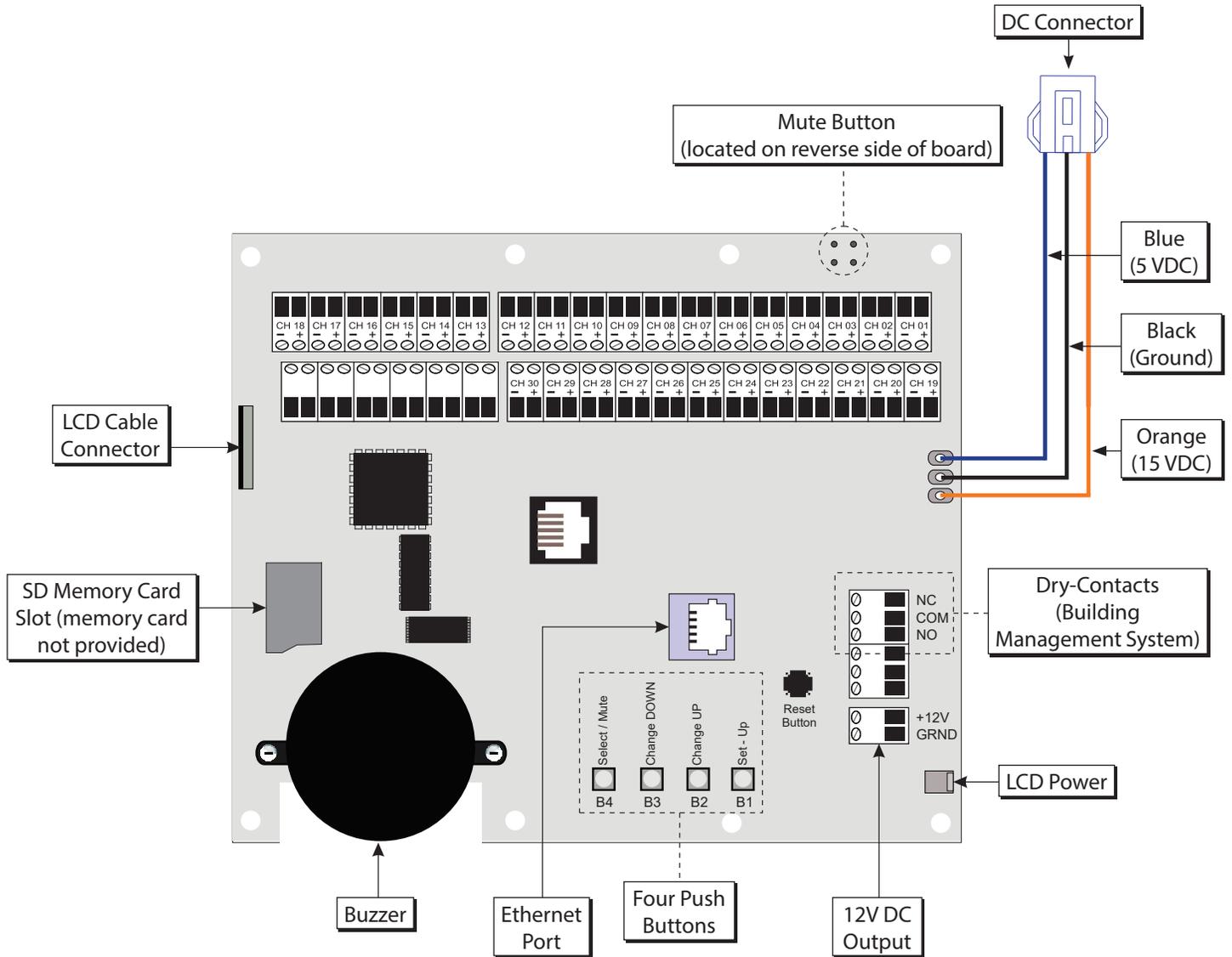
The display will show "Maintenance Mode Active" when Maintenance Mode is enabled.

# Troubleshooting

Symptom	Cause	Corrective Action
No power on the alarm	AC power not available	<ol style="list-style-type: none"> <li>Ensure that the ON/OFF switch on the power supply module is turned ON (see Appendix B).</li> <li>AC wiring not connected.</li> <li>Check the building electrical breaker to ensure that the power is ON.</li> <li>Check the voltage at the terminal block above the transformer. Ensure that 115 VAC to 220 VAC is being supplied.</li> </ol>
	Fuse is blown	Check the fuse. The fuse is located on the upper-right corner of the system power supply. Replace the fuse if it is defective (see Appendix B and Appendix E).
	DC power plug not connected to the LCD module	<ol style="list-style-type: none"> <li>Ensure that the DC power plug is firmly in its socket on the LCD module.</li> <li>Replace the System Power Supply unit if all the above steps fail to resolve the problem.</li> </ol>
Power light is ON, however there is no display on LCD screen	Loose ribbon cable from LCD screen to board	<ol style="list-style-type: none"> <li>Ensure that the cable is firmly in its socket on the LCD screen and board.</li> <li>Replace the LCD module.</li> </ol>
No audible alarm	DC power cable is disconnected or loose, check ribbon cable	<ol style="list-style-type: none"> <li>Ensure that the DC power cable from the system power supply is firmly connected to the LCD module.</li> <li>Replace LCD module.</li> </ol>
Audible signal will not silence	Faulty display module	Disconnect the ribbon cable from the back of the faulty display module and replace the LCD module.
	Connection of the DC power cable from system power supply to LCD module is loose	Disconnect the DC power cable from the LCD module and then reconnect. If audible alarm still persists, replace the System Power Supply unit.
	Faulty push button	Replace the LCD module.
Network connectivity lost	Wrong network cable used	<ol style="list-style-type: none"> <li>Use Cat 5 or 6 (Straight-Through)</li> <li>Static IP address must be used to configure the network switch to the correct port number</li> <li>To test connectivity, assign static IP address to a PC as same subnet as panel. Connect the PC to the panel. Open a shell prompt (Microsoft Windows Command Prompt or MS-DOS prompt) on the start menu, type "ping" followed by a space and then the IP address of the panel then hit Enter. When panel is responded with a ping, connection is successful.</li> </ol>
	Dynamic IP address	
	Wrong port number assigned to the network switch	
Email or Text notification not send	SMTP email server parameters not assigned, authentication errors	<ol style="list-style-type: none"> <li>Contact Hospital IT administrator for SMTP parameters.</li> <li>Must use plain text authentication.</li> <li>TLS/SSL authentication not supported.</li> <li>Configure the exchange server to accept plain text authentication from the panel</li> </ol> <p>**Check the SMTP server logs for reported authentication errors from the panel**</p>
Alarm Logs not recorded	Wrong memory card is used. Must use SD card between 2GB – 32GB	<ol style="list-style-type: none"> <li>Must use SD card between 2GB – 32GB</li> <li>SD card must be formatted to FAT32 system.</li> </ol>
	SD card formatted incorrectly	<p>**Must leave an SD card to the SD card slot to record alarm logs**</p> <p>**Set the DATE &amp; TIME appropriately**</p>

# Appendix A

## WIRING DIAGRAM: CIRCUIT BOARD

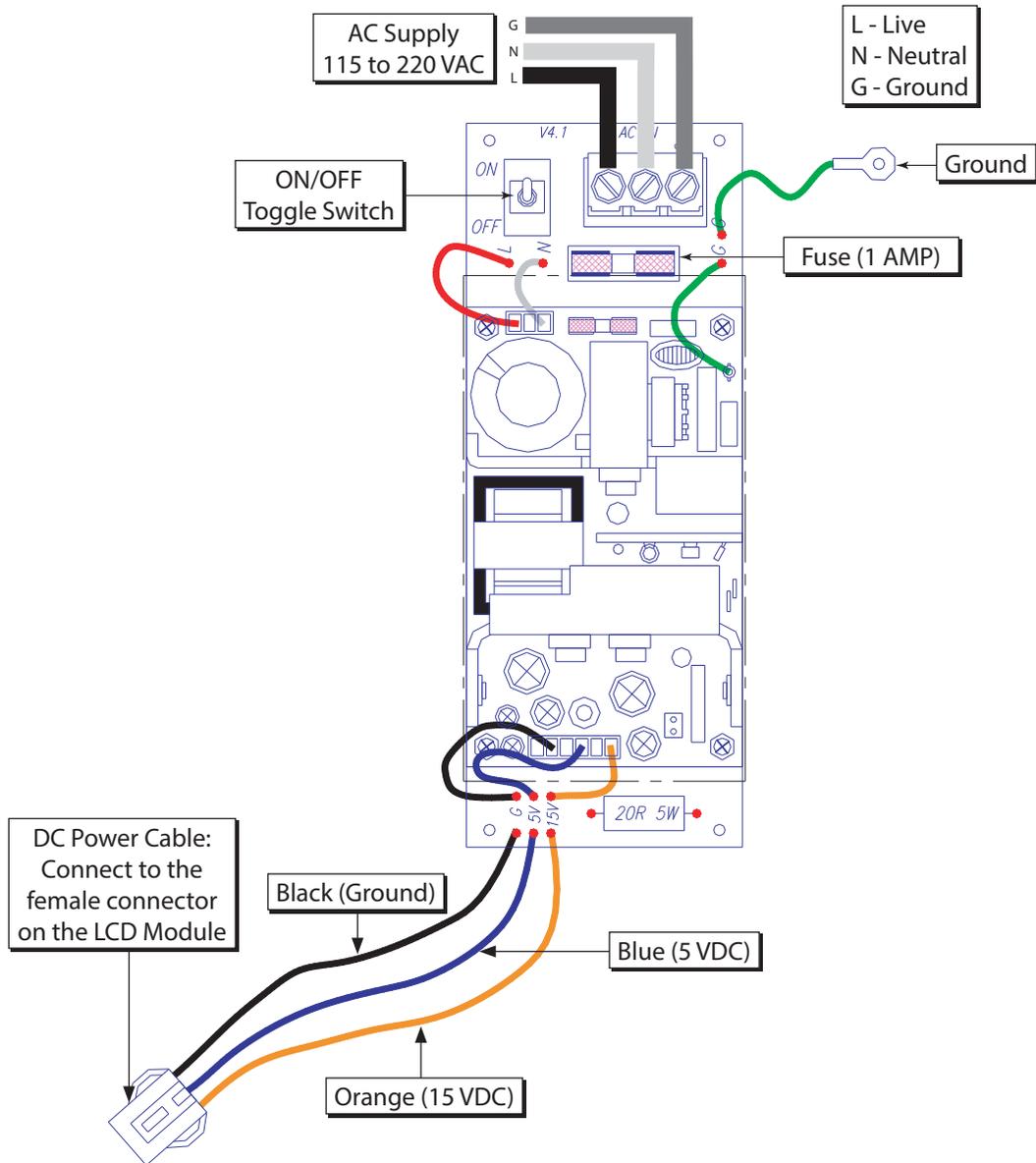


### CAUTION:

1. Keep the shield drain wires as short as possible and taped to prevent from grounding, so they cannot touch the front panel circuit board when front panel is closed.
2. To protect from static electricity, ensure to discharge body static before installing the Medical Gas Alarm.

# Appendix B

## WIRING DIAGRAM: AUTO-SWITCH POWER SUPPLY

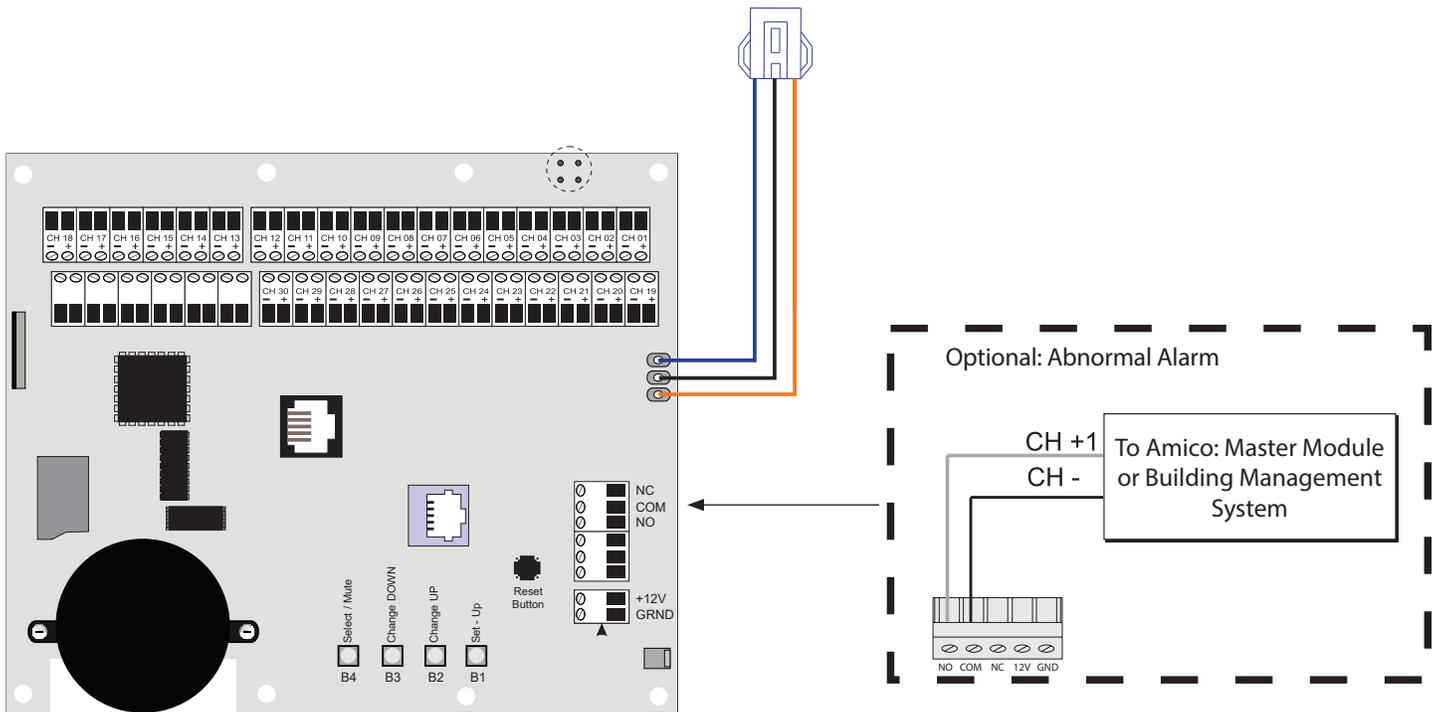
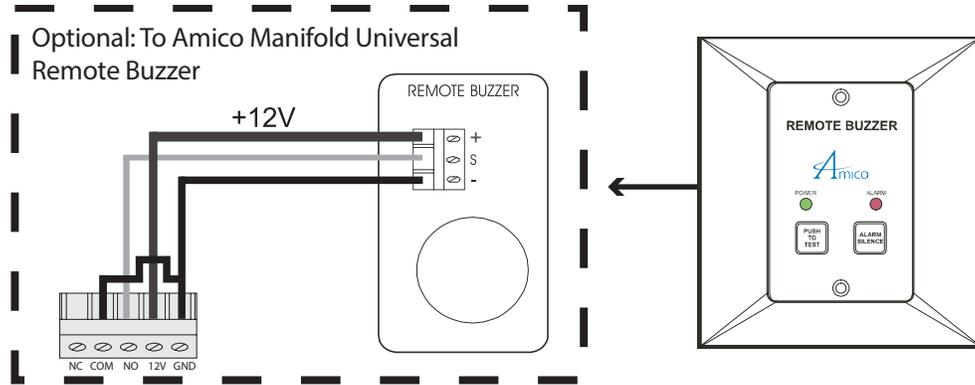


### CAUTION:

1. Verify that power has been switched off prior to working on the alarm
2. Risk of electric shock, disconnect power at the circuit breaker before removing power supply shield

# Appendix C

## WIRING DIAGRAM: LCD DISPLAY MODULE - ALARM BUZZER



# Appendix D

## TECHNICAL SPECIFICATIONS

Supply Voltage: 115 - 220 VAC, 50 - 60 Hz  
Current Draw: 1 Amp. Max.  
Fuse (1/4 \* 1-1/4): Fast Blow 1 Amp.

Cable requirement:

LCD Master Alarm to Source Equipment:

**Important:**

**Cable: ONLY a #22 gauge stranded, shielded twisted pair cable must be used. (Belden # 8451 or equivalent.) In the presence of any electrical, magnetic, radio frequencies, wireless or other interference, cable installation MUST be placed in metallic conduit.**

Master:

Distance: Maximum 10,000 ft [3,000 m]  
Cable: Minimum #22 gauge stranded wire  
Signal: 5 VDC - < 5  $\mu$ A

LCD Generic Alarm:

Output: Dry Contacts NC, open on Alarm  
Rating: 30 VDC - 1.0 Amps.  
60 VDC - 0.3 Amps.  
125 VAC - 0.5 Amps.

# Appendix E

## WIRING

### 1. General Requirements

1. All wiring shall be protected from physical damage by raceways, cable trays or conduit in accordance with NFPA 70, National Electric Code or the Canadian Electrical Code.
2. All alarms are to be powered from the life safety branch of the emergency power system as required by applicable standards.
3. Alarm panel wires should be directly connected to switches or sensor as required by applicable standards.
4. All wire runs should be made with color coded wire. Record color, signal and source of signal for each wire lead to aid in connection of alarm finish components.
5. The alarm panel should not be installed near radio transmitters, electrical motors, electrical control room, switch gear, CT scanners, MRI machines or high voltage lines.
6. In the presence of any electrical, magnetic, radio frequencies, wireless or other interference, cable installation **MUST** be placed in metallic conduits.
7. No solid wire should be used for connecting sensors or master alarms to source equipment.
8. To protect from static electricity, ensure to discharge body static before installing the Alarm.
9. Do not ground the shield drain wire at sensor or inside alarm panel back box.

### 2. Low Voltage wire type, size and other requirements

All low voltage wiring must meet the following criteria:

1. #22 AWG stranded, shielded twisted pair wire **ONLY** must be used, rated for 300V and 60°C (140°F) minimum (Belden 8451 or equivalent).

The following rules along with references to this manual's schematics clarify wiring requirements. Two conductor cables (must be #22 gauge stranded, shielded and twisted pair cable type) are required for each Input.



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