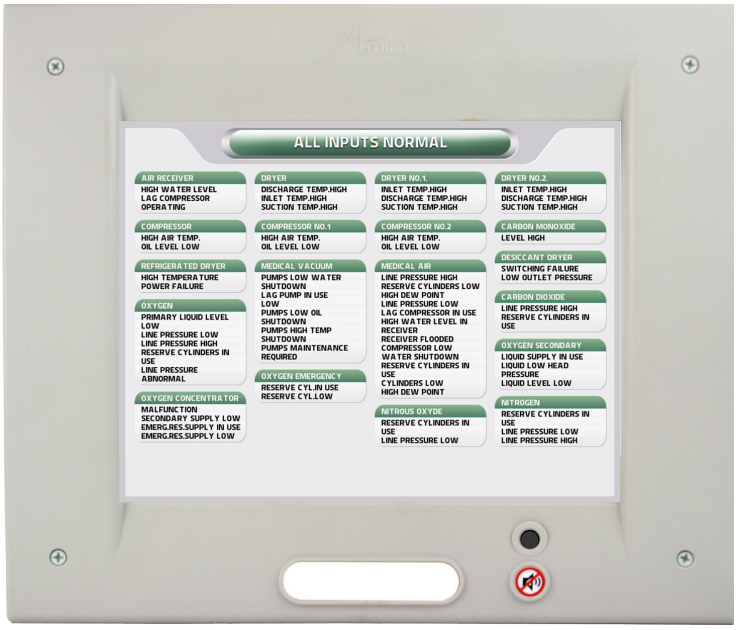
Operating & Maintenance Manual

Alert-4 Ethernet LCD 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 Master 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.

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.

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 port was connected. When an audible alarm is triggered, press the button to silence the alarm. To view the terminal port channels was connected, press and hold the button for 20 seconds to display channel ID.

Under normal operation, group will illuminate as "GREEN - OK" position. If an alarm condition occurs 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 generic alarm indicator.

Features

- Microprocessor based digital LCD capable of connecting up to 30 channels
- Ethernet capable for viewing remotely or wirelessly anywhere in the building
- Adjustable repeat alarm (1, 12, 24 hours or off)
- Maintenance mode available for onsite 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 and Google Chrome

Description of the Alarm

SHIPMENT DETAILS

When you receive an Alert-4 Master LCD series 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

The Alert-4 Master LCD Alarm is a high technology microprocessor based module:

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, buzzer and the "MUTE" button. The function of the "MUTE" button is to silence an alarm that has occurred. By holding the "MUTE" button for 20 seconds, the module will display the terminal points. This module also contains a fail-safe relay that de-energizes when the buzzer is activated. This relay can be used with the Amico Remote Buzzer for applications requiring a remote audible alarm or a Building Management System.

Each Master Alarm will continuously monitor up to 30 channels from equipments. If any of the monitored signals go into alarm condition, the connected channel name with illuminate in "RED" and an audible alarm will sound. The alarm condition can be viewed through web browser using Internet Explore or Google Chrome.

PLEASE NOTE: Contacts located on the back of module are dry contacts only. DO NOT apply any voltage.

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/MODULE ASSEMBLY

i. Remove the frame/module assembly from its protective box.

ii. Remove the corner screws from the front frame section (four screws).

iii. Attach the LCD module to the back-box assembly by using flat head screws (provided with frame in a plastic bag) to the hinge located on the back-box.

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

CAUTION: The microprocessor circuitry on the ALERT-4 Master Alarm contains sophisticated integrated semiconductors. If it becomes necessary to remove the LCD circuit board, PLEASE hold the boards by the edges. **DO NOT TOUCH** any of the components on the board. Static discharge can cause the modules to malfunction or become damaged.

STEP 3: SYSTEM POWER SUPPLY

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.

i. Ensure that the ON/OFF switch is in the OFF position.

ii. 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.

iii. Connect the AC power to the terminal blocks as shown in the wiring diagram (see Appendix B).

CONNECTING

i. Connect a shielded twisted pair cable from the junction box to the back box assembly. Knockouts are provided throughout the alarm back box. Up to 100 feet [30.5 m] of 22 Gauge, shielded 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.

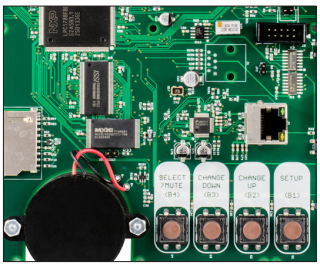
NOTE: Shielded or twisted pair cable is required. (BELDEN #8451 or equivalent, supplied by others).

DRY CONTACT

If the dry contacts for a generic alarm is 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.

STEP 4: LCD DISPLAY SETUP



i. Press the Setup button (B1) and press the SELECT button (B4)

ii. Volume control: 90, 80, 70, 60 – press CHANGE UP/DOWN to change noise level

iii. Press SELECT for LCD brightness and press CHANGE UP/DOWN to change LCD brightness

iv. Press the SELECT button (B4)

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.

STEP 5: CLOSING THE FRAME/MODULE ASSEMBLY

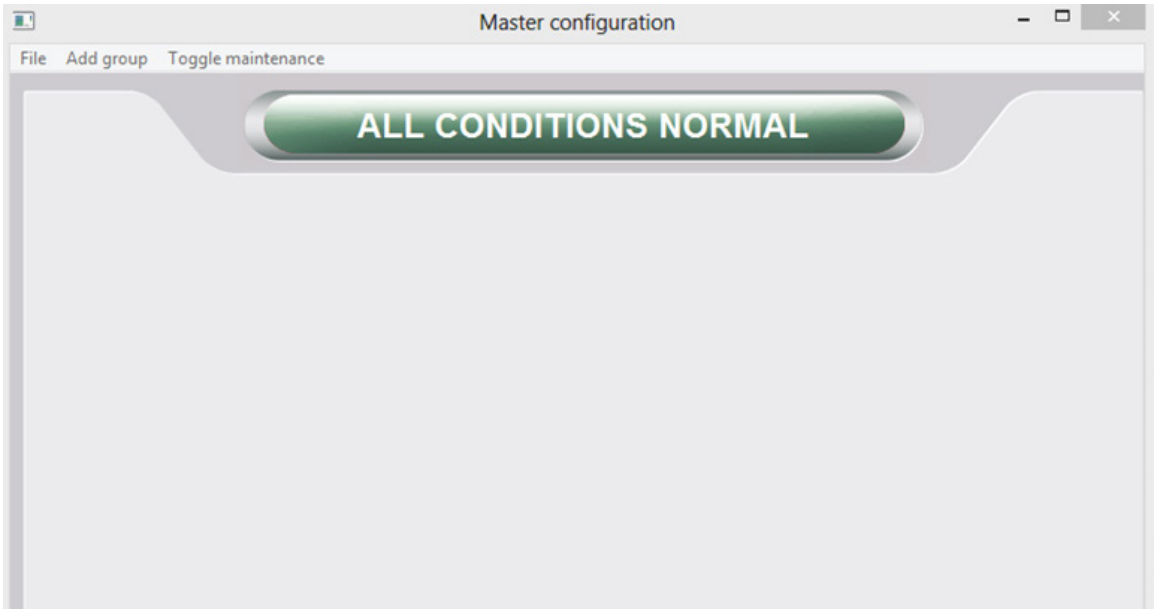
i. Close the frame panel by tightening the screws found on the frame panel to the back box. Ensure that the screws are securely fastened to keep the LCD Alarm closed.

ii. Carefully place the front frame over the frame panel. Screw in the screws that were removed in Step 2, part ii. The alarm shall now be ready for use.

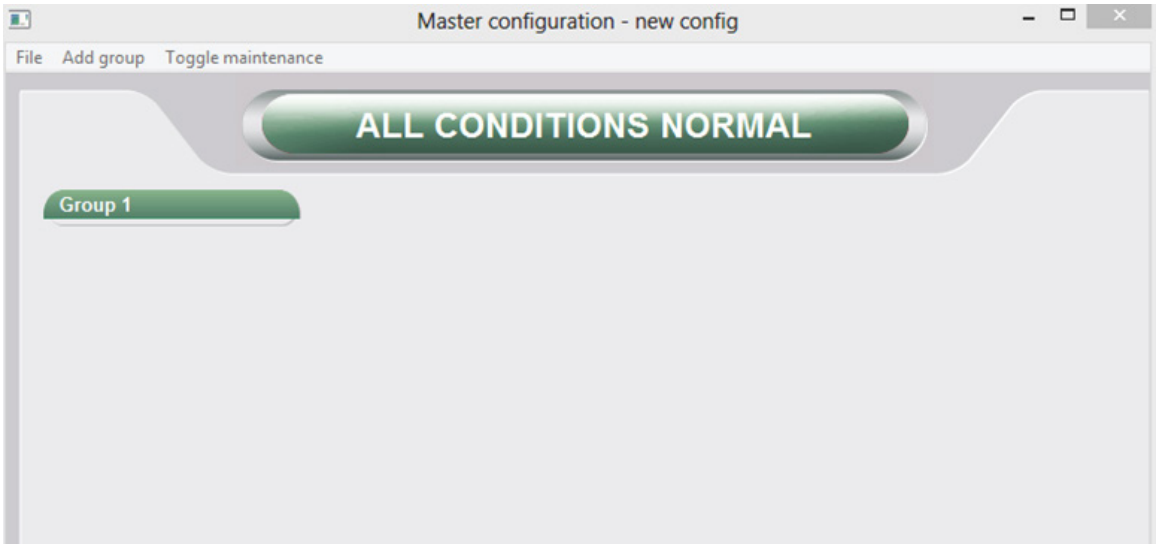
AMICO LCD ALERT 4: Master Alarm Ethernet Configuration

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

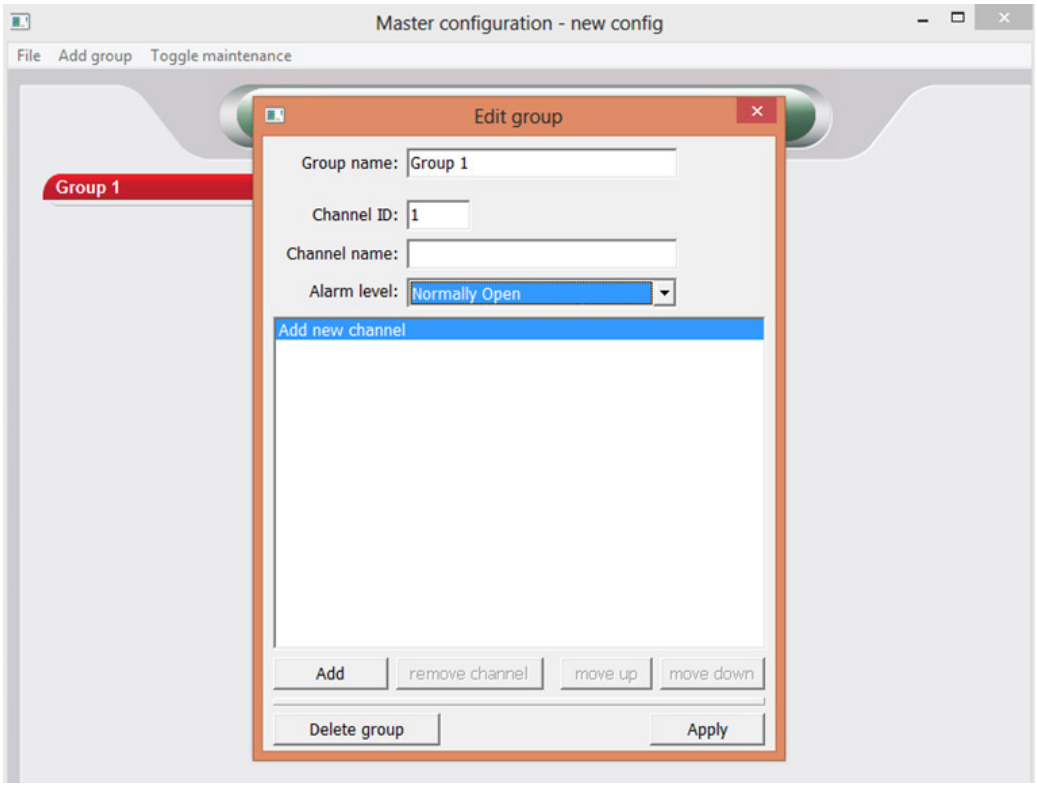
1. Open Master Configuration program provided by Amico Corporation on the SD card.



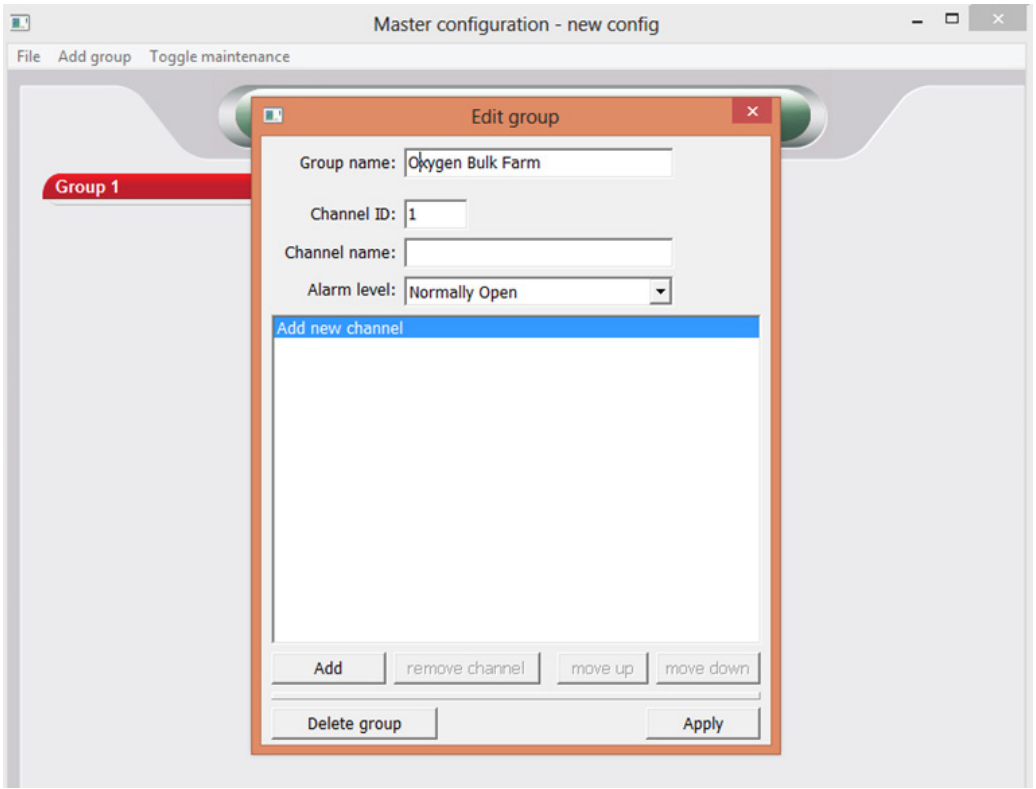
2. Click "File" located at the top left corner. Then click "Start New Config". Then click "Add Group".



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

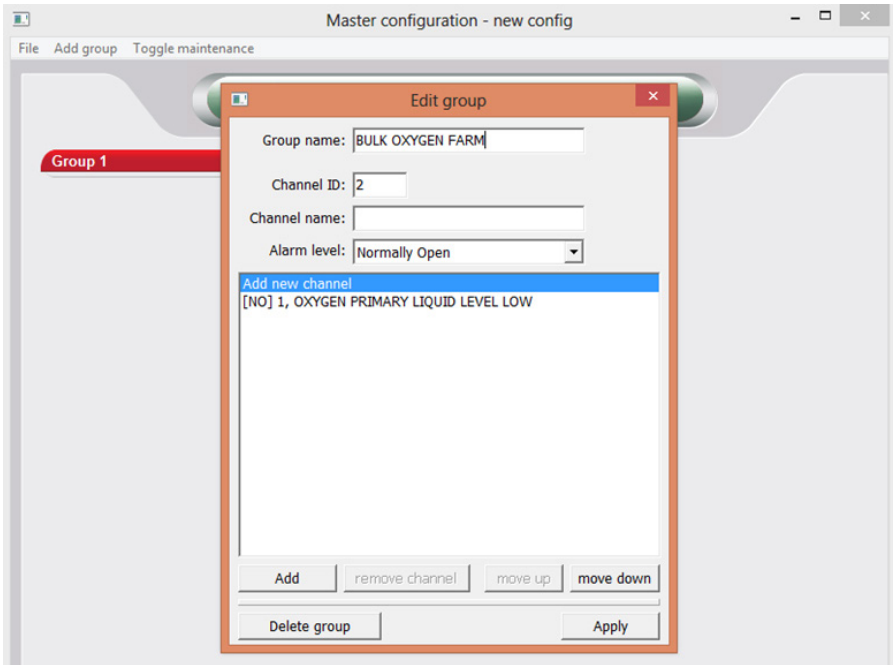


4. Under “Group Name”, identify medical gas source supply (e.g., Oxygen Bulk Farm).

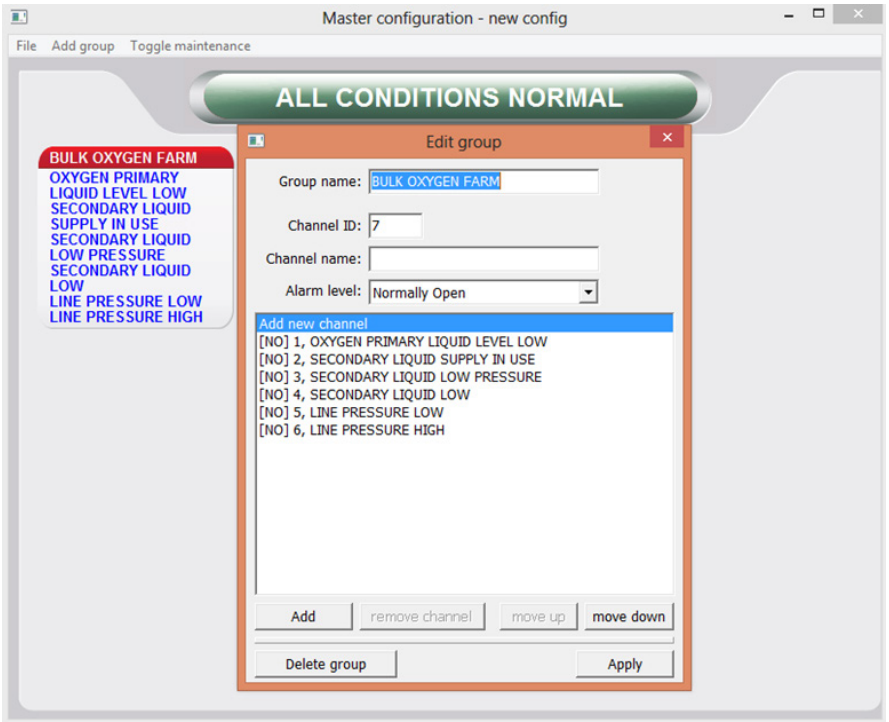


CHANNEL NAME AND ALARM CONDITIONS.

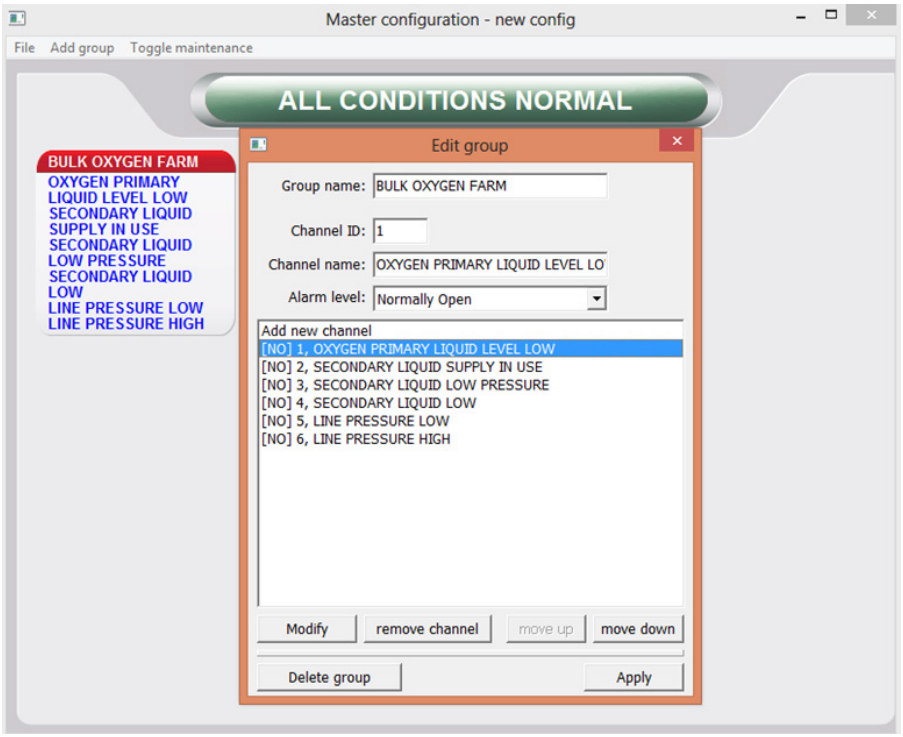
5. Under "Channel Name" column, indentify the channel name and click "Add" button to add channels (e.g., Oxygen Primary Liquid Level Low). To set alarm conditions for normally open or closed circuit, click the drop down arrow to change alarm conditions.



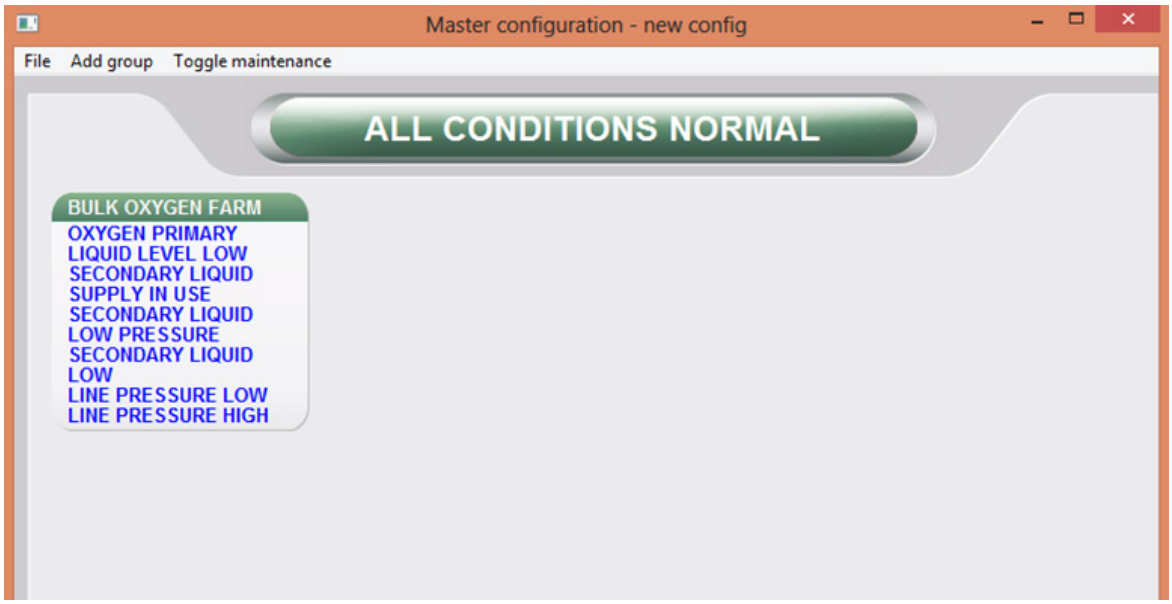
a. To modify the Group Name, double click to open the "Edit Group" window. Revise the group name then click "Apply".



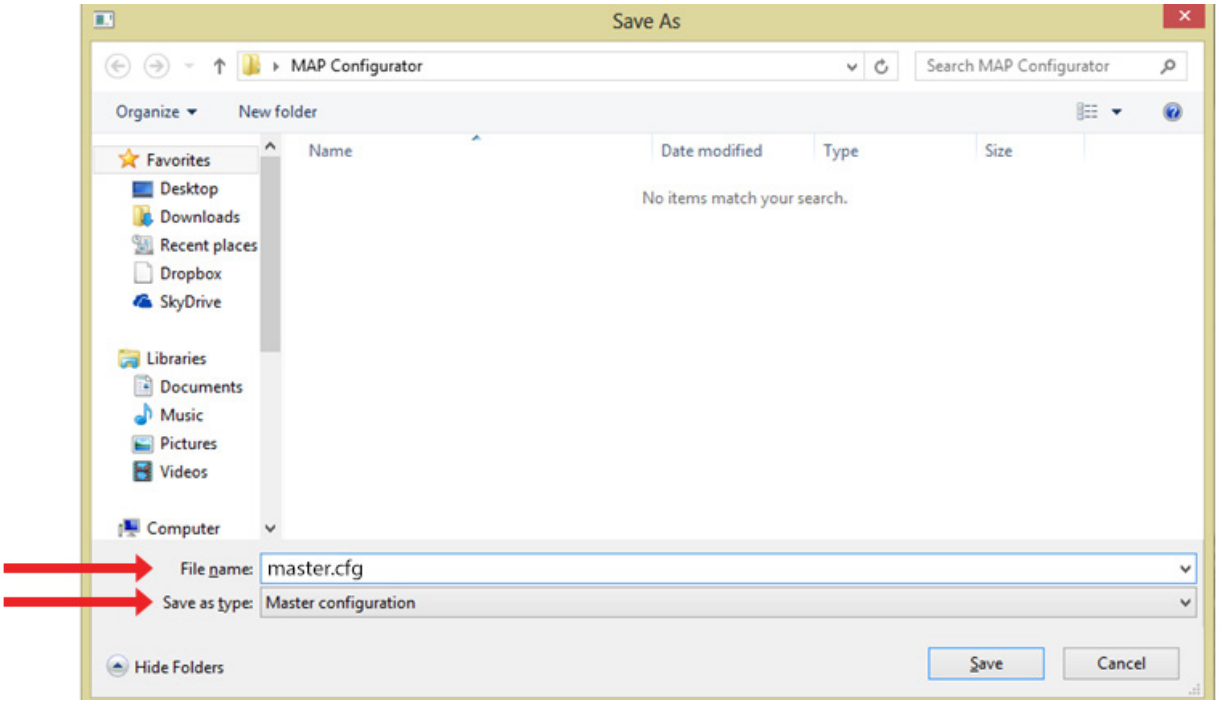
b. To modify the Channel Name, double click to open the "Edit Group" window. Click the channel you want to revise then revise the channel name. Click "Modify" then click "Apply".



6. Click the "Apply" button to complete each group.



7. Save the Configuration file to the SD Card and rename the file. The file name must be saved as **master.cfg** as "Master Configuration" file type.



Network Setup

CAUTION: Have the information systems personnel set up the network interface. Before making any changes to the network setting, notify information systems personnel.

EQUIPMENT NEEDED TO SETUP THE NETWORK

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

SETUP

- Connect Alert 4 Master Alarm to an Ethernet switch using 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 Mbits/s a switch and it also improves network performance and keeps unnecessary traffic from being routed to the alarm.

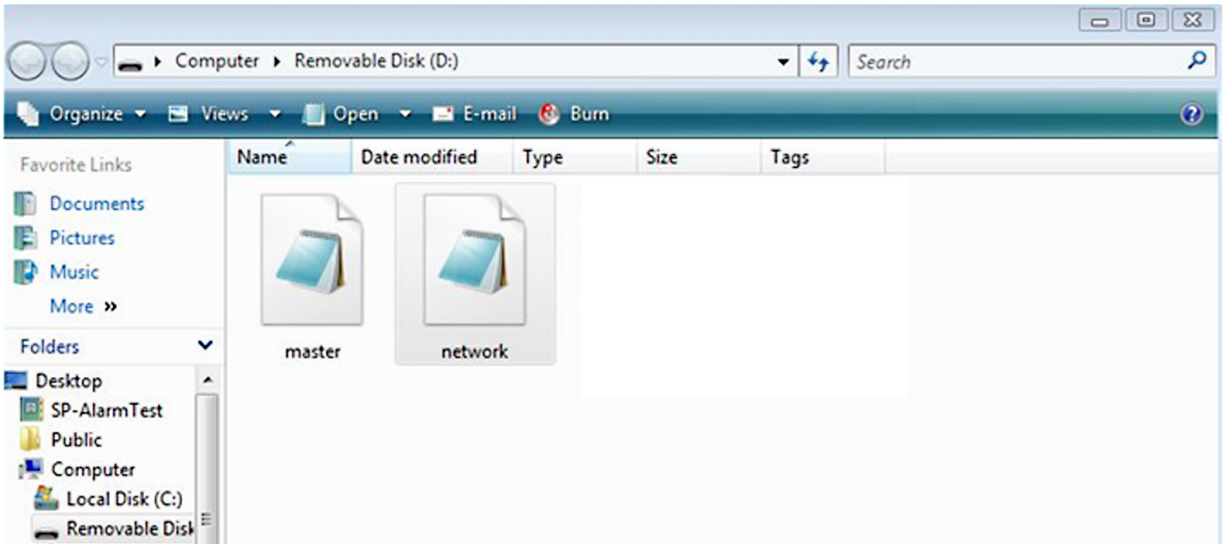
- Amico Alert 4 Master Alarm will be set to factory default settings, the IP Address, Subnet Mask and Gateway as following:

  IP Address: 192.168.1.100
  Gateway: 192.168.1.1
  Subnet Mask: 255.255.255.0

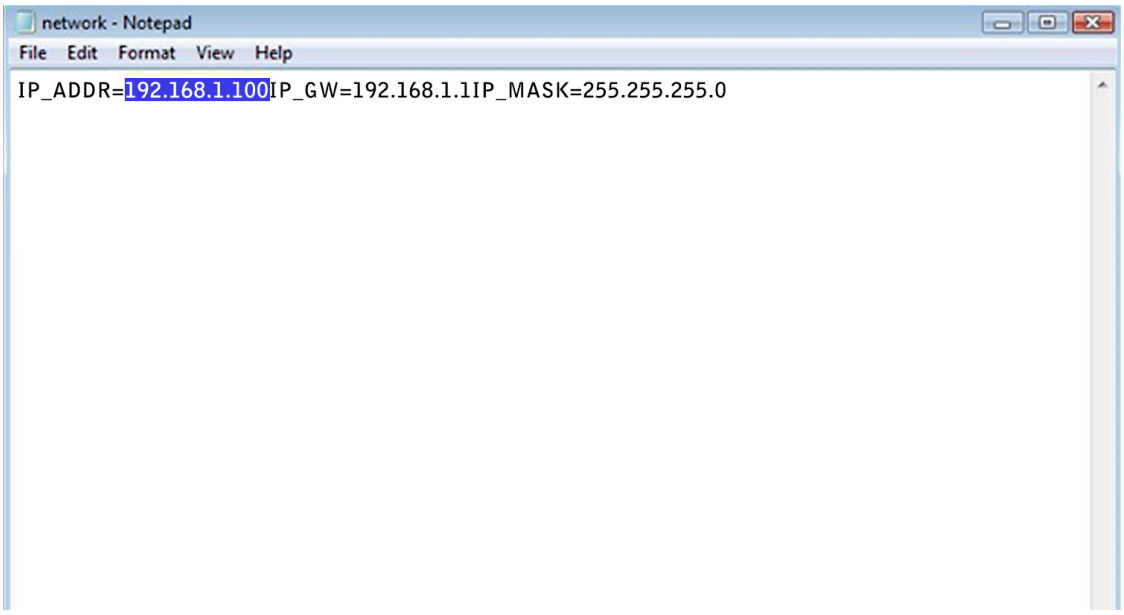
- Static IP configuration needs to be used to connect to the Hospital Network
- Upon power-up, the device will immediately begin using the static IP configuration
- Each alarm requires a different IP address to connect to the network
- Verify the green LINK LED illuminates at the Ethernet Port

CHANGING IP ADDRESS

Open the SD Card with files provided by Amico Corporation. Open the file named "Network" to change desire network IP address.



Change the selected Amico's default IP address to the desire IP address, Gateway and Subnet Mask, then save the file by clicking "File" then "Save".



When all files are saved in the SD card, insert the SD Card into the SD Card Slot on the LCD Alarm board (Refer to Appendix A).

To load the Network configuration, press and hold Reset button and Setup button at the same time for two seconds and let go of the Reset button while still holding Setup button, until the new Network configuration is uploaded to the Master Alarm. When loading is completed, the screen will display the new Network address, as shown below:

BUILD DATE: OCT 24 2014
BUILD VERSION: 1497

GATEWAY: 192.168.1.1
MASK: 255.255.255.0
IP ADDRESS: 192.168.1.115

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

- Once the text 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 master alarm, and then proceed to remove the card.
- Once the card has been removed, restart the LCD Alarm to ensure that the configured and network setting have been saved onto the LCD Alarm.

CONNECTING TO ALARM

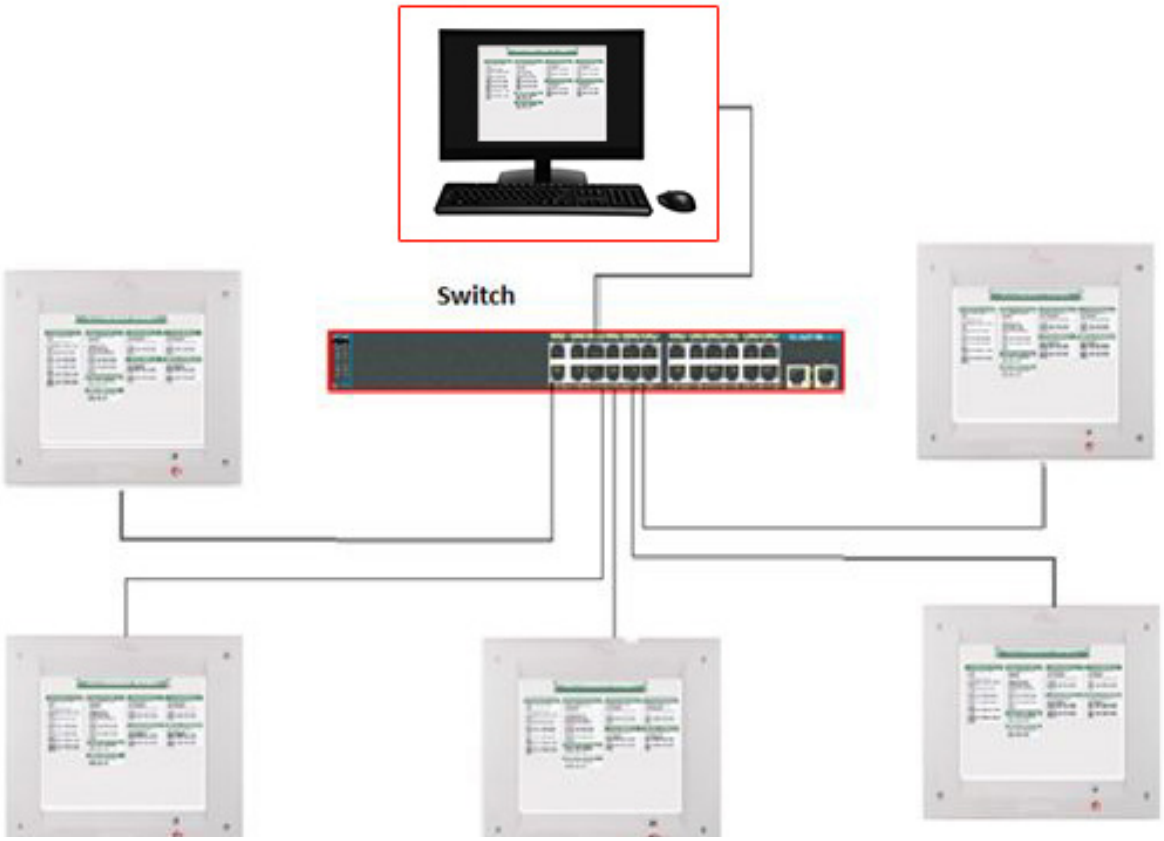
- Start the web browser (Google Chrome or Internet Explorer)
- Enter the device IP address in the browser's address bar (e.g., http://192.168.1.1XX)

NOTE: To find device IP Address, press Reset button on the back of the Alert 4 Master Alarm.

Network Diagrams

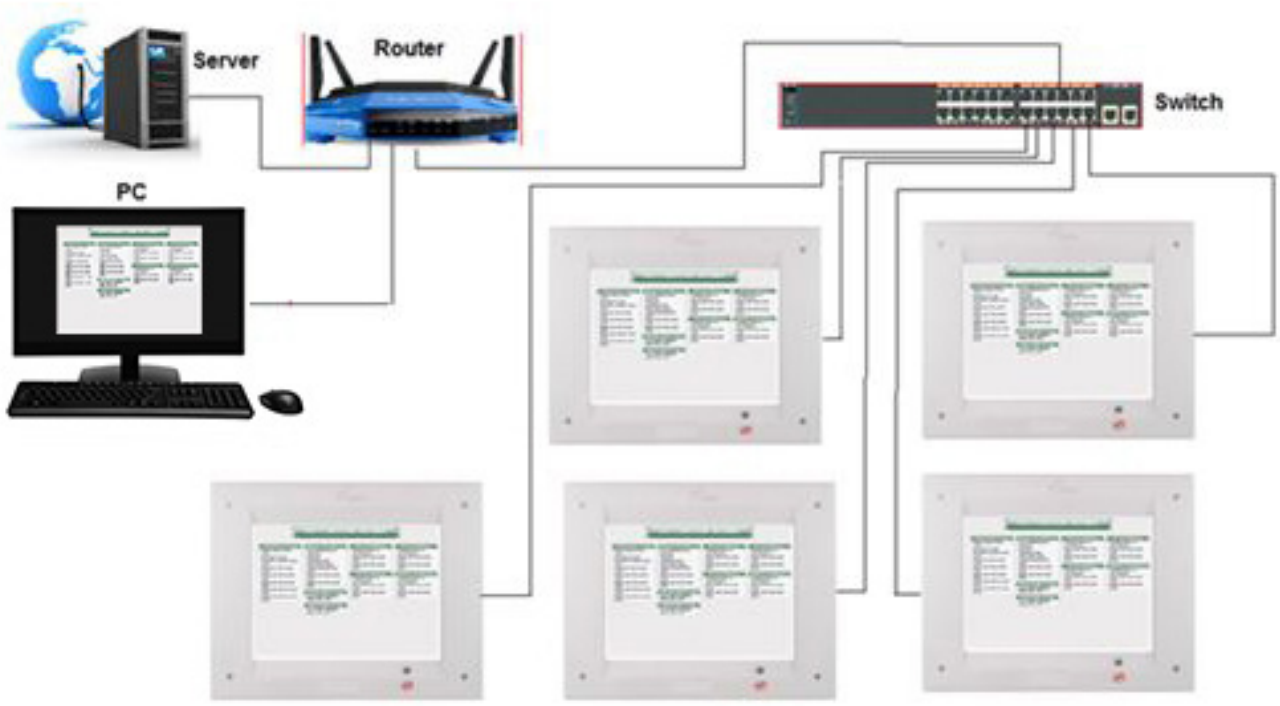
DIRECT CONNECTION

SIMPLE UNMANAGED NETWORK



Network Diagrams

COMPLEX MANAGED NETWORK



Spare Part Numbers

ACCESSORIES/MISCELLANEOUS

Model Number	Description
A3-MAN-ALM-ENG	Alert-3 Alarm Manual English
A2P-POWER-V2	Power Supply Module Alert-2
A2P-BOXASS-3LCD	Alarm Back Box Assembly 3-Station Alert-2
A3P-FRMASS-LCD	LCD Alarm Frame Assembly for LCD Alert-3
A3P-LCD-SCREEN	LCD Screen
A3P-RIBBON-CABLE	Ribbon Cable 3" long
A2X-BOX-3-FILL	Alert-2 Alarm Box Filler Frame 3-Station
A3X-A-TERM-LAB30	Terminal Block Label 30 points
A3X-LCD-LABEL	LCD Alarm Front Label
A3X-LCD-LABEL-MUTE	Alert-3 Mute Label

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.

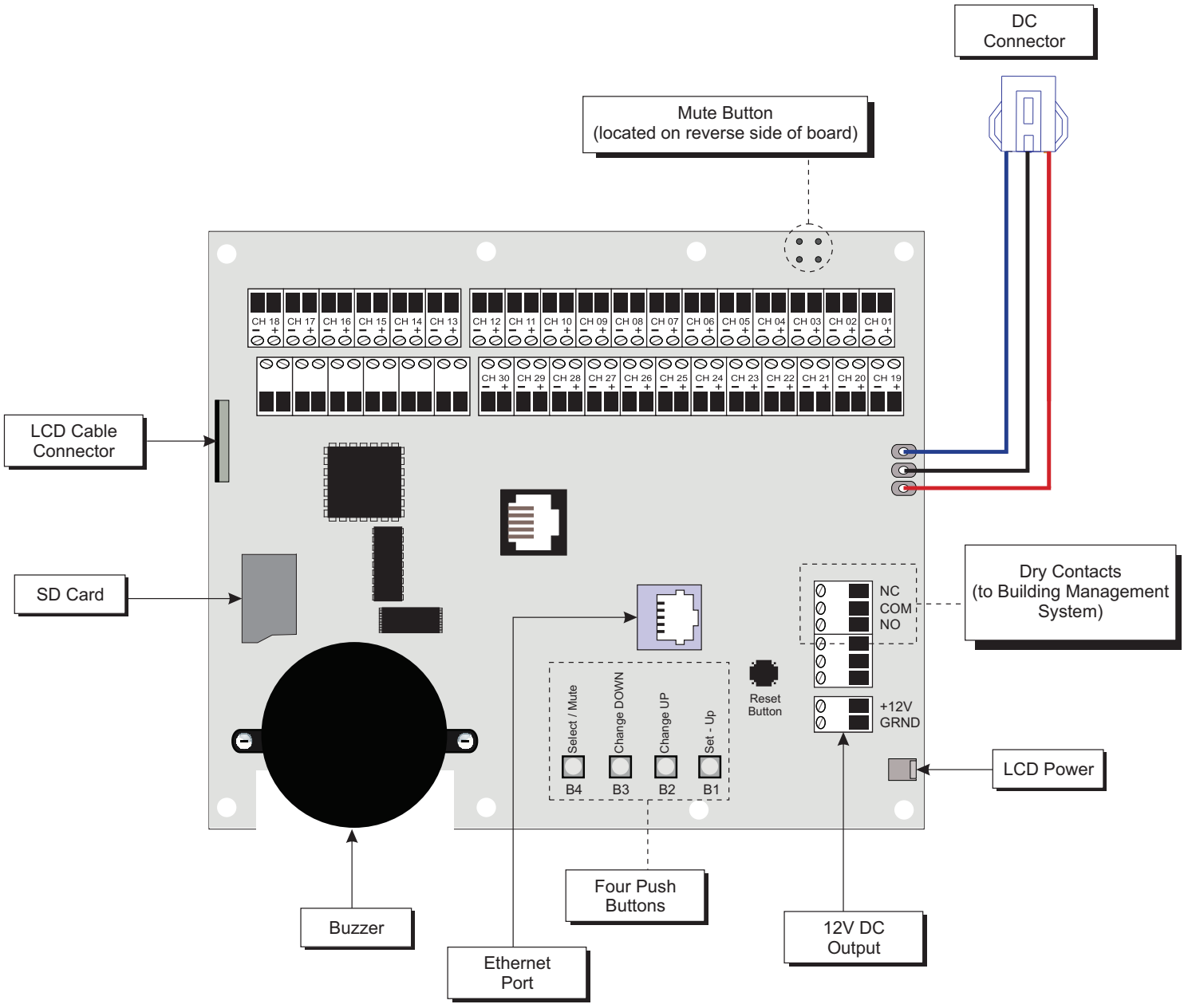
Display will show "Maintenance Mode Active" when Maintenance Mode is enabled.

Troubleshooting

Symptom	Cause	Corrective Action
No power on the alarm	AC power not available	a. Ensure that the ON/OFF switch on the power supply module is turned ON (see Appendix B). b. AC wiring not connected. c. Check the building electrical breaker to ensure that the power is ON. d. Check the voltage at the terminal block above the transformer. Ensure that 115 VAC to 220 VAC is being supplied.
	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 G).
	DC power plug not connected to the LCD module	a. Ensure that the DC power plug is firmly in its socket on the LCD module. b. Replace the System Power Supply unit if all the above steps fail to resolve the problem.
Power light is ON, however there is no display on LCD screen	Loose ribbon cable from LCD screen to board	a. Ensure that the cable is firmly in it's socket on the LCD screen and board. b. Replace the LCD module.
No audible alarm	DC power cable is disconnected, loose or check ribbon cable	a. Ensure that the DC power cable from the system power supply is firmly connected to the LCD module. b. Replace LCD board.
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.

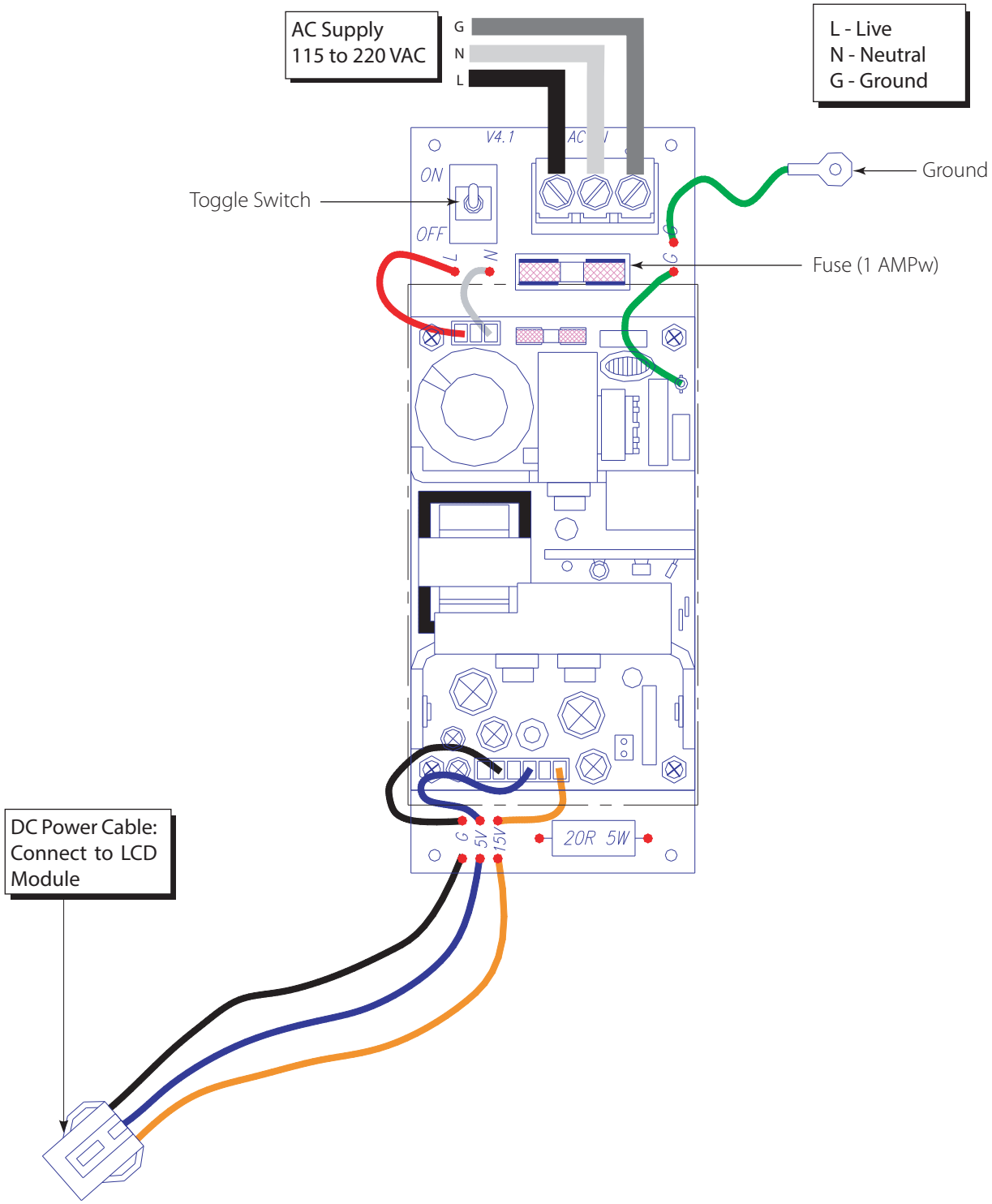
Appendix A

WIRING DIAGRAM: LCD MOTHERBOARD



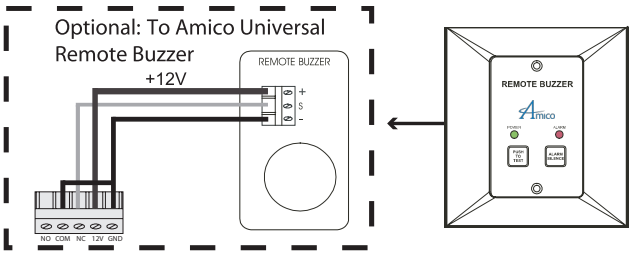
Appendix B

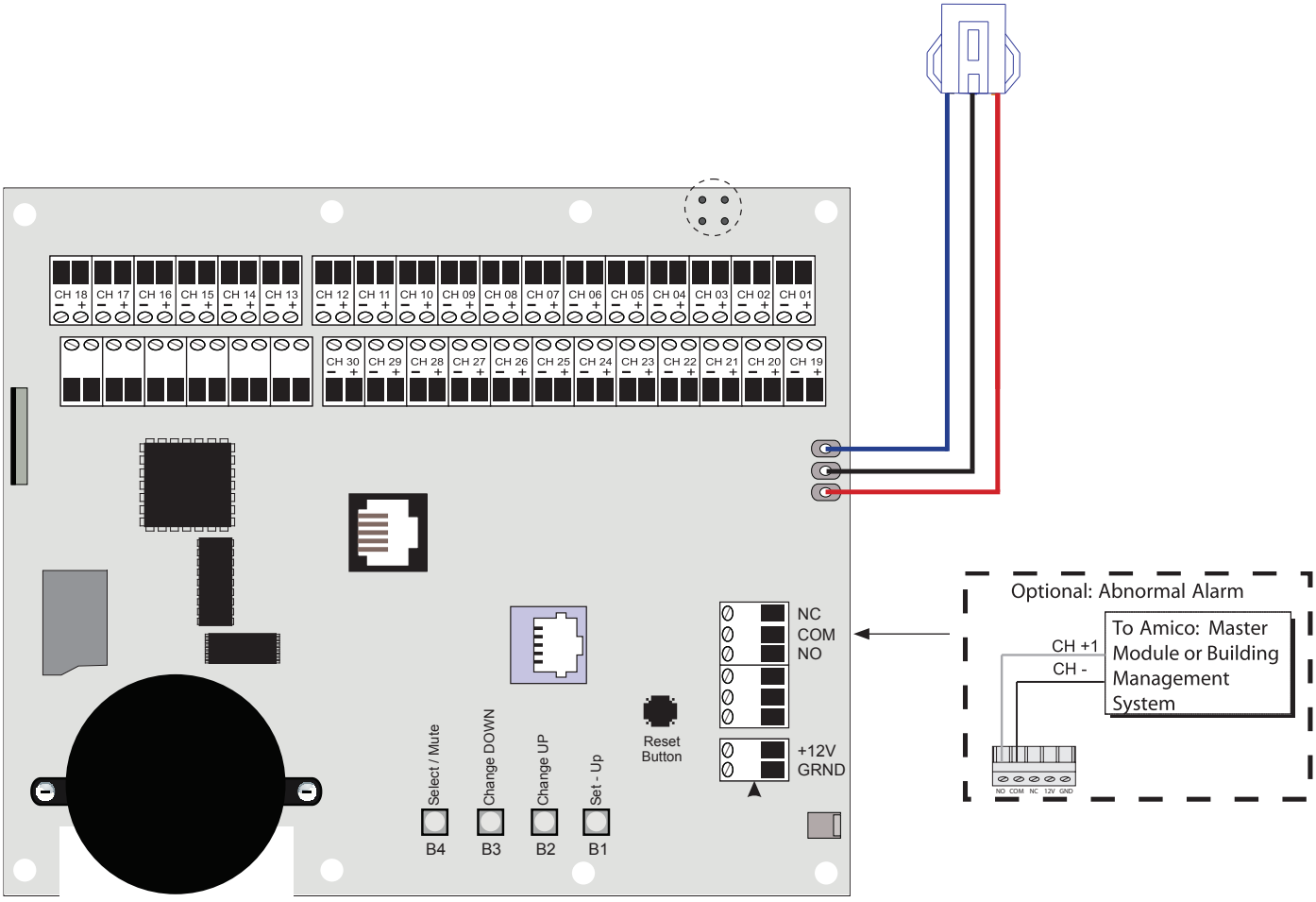
WIRING DIAGRAM: AUTO-SWITCH POWER SUPPLY



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 the Source Equipment:

Distance:	Maximum 10,000 ft [3,000 m]		
Cable:	Minimum #22 gauge wire		
Signal:	5 VDC	-	30 µA

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.

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