Public Address System

PAS

Installation | Configuration | Operation | Troubleshooting

Administrator Guide

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Code Blue®

800.205.7186 • www.codeblue.com

WARNING

Only qualified personnel should install this unit. The installation should conform to all local codes. In some countries, a certified electrician may be required.

CAUTION

No caution is necessary for this product.

NOTICE TO USERS

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Table of Contents

1 Introduction

Thank you for choosing the Public Address option for your Code Blue application. Public Address is a centralized amplifier-based system designed to provide voice paging and broadcast alarm tones during emergencies. The system can transmit alarm tones and voice messages in a reliable and safe manner from a central location to all or selected areas of the facility via loudspeakers. The entire operational area can be divided into one or more zones, which can be accessed independently either for announcements or alarm broadcasting. Loudspeakers are installed in these zones. There are no limitations to the number of zones in a system or number of loudspeakers in each zone. The system is designed to offer clear reproduction of sound and intelligibility, even in high noise areas.

1.1 Overview

This manual contains all of the Code Blue PAS information needed on the CB 1 series with Public Address, CB 5-s with Public Address, WM-180 Public Address System, CB 2-e with Public Address and 360° PAS retrofit top. This manual contains a general overview of the Code Blue PAS options and its application, installation and wiring.

CB 1-s w/ PAS

CB 5-s w/ PAS

WM 180°

CB 2-e w/ Public Address

360° PAS Retrofit Top

1.2 PAS Options:

1.2.1 CB 1 Series with Public Address Units – Outdoor

- Large diameter towers; analog or IP
- An excellent choice when instant mass notification of a geographic area is essential. The unique six-speaker design delivers optimal audio source dispersion utilizing state-of-the-art amplifiers and horn array.

1.2.2 CB 5-s with Public Address Units – Outdoor

- Small diameter towers
- Exclusively designed as an emergency communication system to deliver maximum audio clarity and range to ensure notifications are accurately broadcast to your intended audience.

1.2.3 CB 2-e with Public Address Units – Indoor & Outdoor

- Wall or pole mount; analog or IP
- An excellent choice for parking decks, dorm entrances, hallways and public transit centers where instant mass notification of a geographic area is essential.

1.2.4 360 ° PAS Retrofit Tops – Outdoor

- PAS top kit for existing standard CB 1 series towers in the field to provide public address capabilities.
- The unique six-speaker design delivers optimal audio source dispersion utilizing state-of-the-art amplifiers and horn array.

1.2.5 WM-180 Wall Mount PAS unit – Indoor & Outdoor

- Wall or pole mount option remotely adds public address capabilities to new or existing CB units.
- By adding an analog or IP controller board, you enable the WM-180 to be directly managed by Code Blue's Blue Alert® MNS (Mass Notification System) software, granting the user messaging options. The controller also monitors the amplifier and speaker for various failures, which are reported to the appropriate maintenance personnel, and allows the user to call a single WM-180 unit for a targeted message.

2 Before You Start

2.1 NFPA 72 Chapter 24

This regulation covers the application, installation, location, performance, inspection, testing and maintenance of fire alarm systems, supervising station alarm systems, public emergency alarm reporting systems, fire warning equipment and emergency communications systems (ECS), and their components.

2.2 UFC-4-021-1

This provides technical criteria for systems that implement mass notification in compliance with the Department of Defense's antiterrorism requirements. Implement national design standards and recommendations for mass notification systems, as provided in NFPA 72, including Annex E.

2.3 Precautions

Code Blue recommends professional services before the order and installation of all PAS products.

For survey information, please email customerservice@codeblue.com.

2.3.1 PAS Site Survey – call for scheduling and pricing

- Ambient Noise Survey: Measures the sound energy flowing into, or outward from, a specified area.
- System Design Survey – Involves the placement, wiring and installation of PAS equipment.
- Complete Survey – Includes ambient noise and system design of PAS equipment.

2.4 In Case of Breakdown

Code Blue Technical Support
Email: tss@codeblue.com
Toll free: 800-205-7186, Opt. 3

2.5 In Case of Abnormal Operation

If the unit emits smoke or an unusual smell, water or other foreign materials enter the enclosure, or the unit is dropped or the enclosure is damaged, power off immediately and contact Code Blue Customer Service.

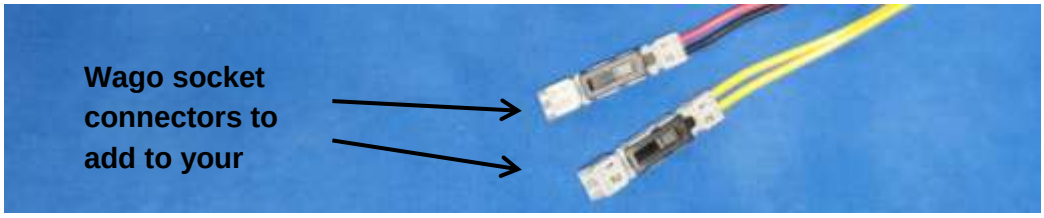
Email: customerservice@codeblue.com

Toll free: 800-205-7186, Opt. 2

3 How to Update Connectors

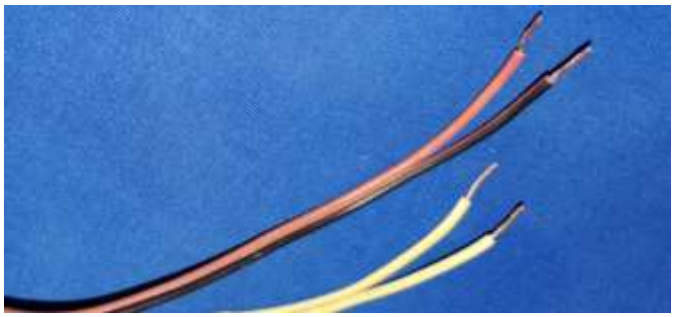
As of 2020, many Code Blue products come with Wago connectors. These connectors provide ease of use and a much stronger connection. Below are the steps needed to change to the new connectors.

Example:



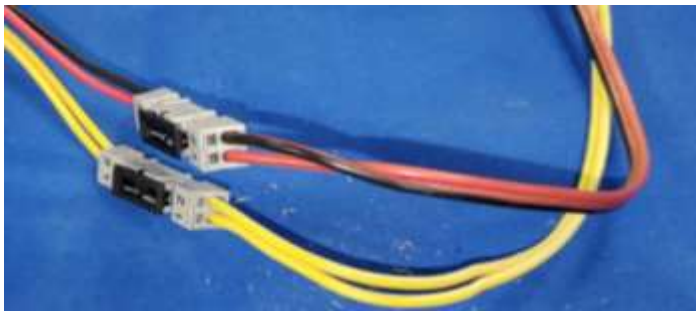
Cut off both wires.

Strip all wires and twist tight.



Place small screwdriver into square hole and push down. Insert cut wire into round hole and remove screwdriver. Repeat on the rest of the connectors.

Once all connectors have been switched, you are ready to apply power.



Please contact **technicalsupport@codeblue.com** if you need further assistance.

4 Installation & System Setup

This section covers the following units:

- CB 1 Series with Public Address, including the 360° PAS Retrofit Kit
- CB 5-s with Public Address
- CB 2-e with Public Address
- WM-180°

4.1 CB 1 Series with Public Address, including 360° PAS Retrofit Kit

The following models are covered in the installation instructions for CB 1 Series with Public Address or the 360° PAS Retrofit Kit:

- CB 1-e
- CB 1-s
- CB 1-d

4.1.1 Tools Required

- Ladder – to reach the top of the unit.
- Security bit – to secure the PAS top to the adapter ring.
- 6mm Allen wrench – to secure the PAS adapter ring to the top of the unit.
- 3/8” socket set - to mount the mounting plate containing the new toroid transformer.

4.1.2 Before You Begin

4.1.2.1 Remove 120V AC power from the unit.

4.1.3 Install Adapter Ring

4.1.3.1 Remove the existing dome top assembly. Disconnect the red/black and yellow/yellow wiring harnesses connected to the beacon/strobe mounted in the dome top assembly.

4.1.3.2 Place the adapter ring on top of the bollard and tighten the three Allen set screws to hold in place (see Figure 2 on Page 12).

4.1.4 Transformer Installation

Install new toroid transformer.

NOTE: Skip this section if you ordered a CB 1 Series with Public Address as a complete unit.

4.1.4.1 Remove lower access door on the CB 1 bollard.

4.1.4.2 Remove the existing 120V AC step down transformer.

4.1.4.3 Install toroid transformer with mounting plate using supplied hardware (see Figure 1 on Page 10).

4.1.4.4 Connect incoming 120V AC wiring to the transformer using the junction box on mounting plate. Refer to included wiring diagram for wiring terminations (See Figure 5 on Page 19).

4.1.4.5 Run the supplied amplifier wiring harness, beacon/strobe power harness (red/black), beacon/strobe auxiliary harness (yellow/yellow), 7 pin control cable and RJ-11 audio cable to the top of the bollard. Connect the molded quick connector on the red/black harness to the manifold connector on the transformer. Connect the yellow/yellow harness, 7 pin control cable and RJ-11 to the phone board. Connect the large white connector of the amplifier wiring harness to the wiring connector on the transformer. Refer to the included wiring diagram for wiring terminations (See Figure 1 on Page 10).

Figure 1

4.1.5 Install 360° PAS Speaker Unit

4.1.5.1 Connect the red/black and yellow/yellow wiring harnesses to the red/black and yellow/yellow wiring pigtails coming from the beacon/strobe.

4.1.5.2 Connect the 6 pin wiring harness, 7 pin control cable and RJ-11 audio cable to the ports on the amplifier.

4.1.5.3 Set the PAS speaker unit on the adapter ring, lining up the screw holes at the bottom of the unit. Secure the speaker unit with the provided security screws.

4.1.5.4 Reapply power to the unit (see **Error! Reference source not found.** on Page 1).

4.2 CB 5-s with Public Address Installation

4.2.1 Tools Required

- Ladder – to reach the top of the unit.
- Security bit - to secure the PAS top to the adapter ring.
- 3/8” socket set - to secure the PAS adapter base to the top of the unit.
- 6mm Allen wrench - to secure the PAS adapter ring to the top of the PAS adapter base.

4.2.2 Before You Begin

4.2.2.1 Remove 120V AC power from the unit.

4.2.3 Install Adapter Base

4.2.3.1 Remove existing beacon/strobe assembly. Disconnect the red/black and yellow/yellow wiring harnesses connected to the beacon/strobe mounted on top of the CB 5-s unit.

4.2.3.2 Place a foam gasket on the unit, then the adapter base on top of the bollard and tighten the 3/8” bolts with washers to secure the adapter base to the set screws to hold in place.

4.2.3.3 Place adapter ring on top of the adapter base and tighten the three Allen set screws to hold in place (see Figure 2 on Page 12).

4.2.4 Install 360° PAS Speaker Unit

4.2.4.1 Connect the red/black and yellow/yellow wiring harnesses to the red/black and yellow/yellow wiring pigtails coming from the beacon/strobe.

4.2.4.2 Connect the 6 pin wiring harness, 7 pin control cable and RJ-11 audio cable to the ports on the amplifier.

4.2.4.3 Set the PAS speaker unit on the adapter ring, lining up the screw holes at the bottom of the unit. Secure the speaker unit with the provided security screws.

4.2.4.4 Reapply power to the unit (See Figure 7 on Page 21).

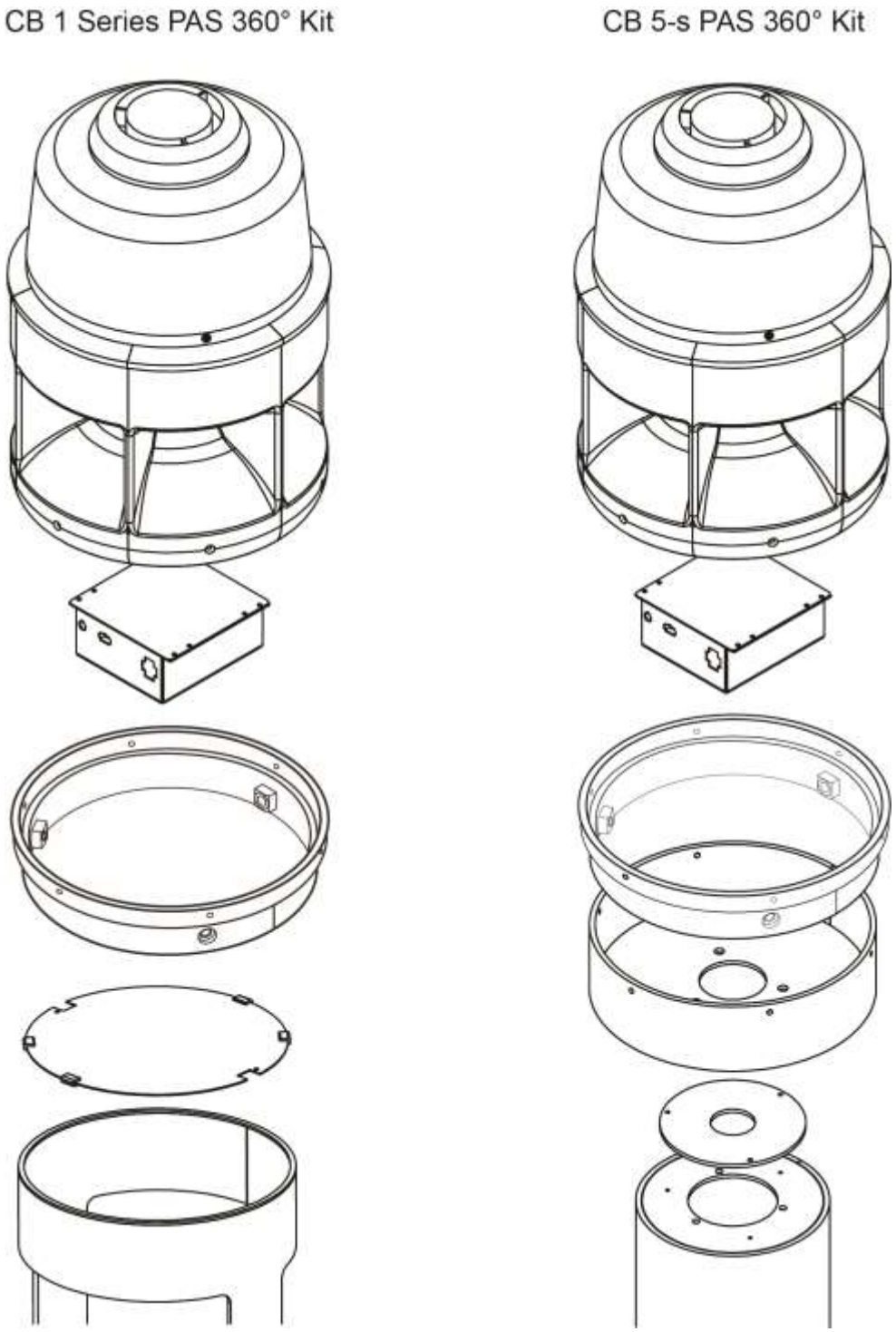


Figure 2

4.3 CB 2-e with Public Address Installation

4.3.1 Tools Required

- Security bit - to remove phone to access mounting holes.
- ½-inch concrete bit – to drill holes in wall for the mounting anchors for mounting bolts.
- 9/16” socket set - to secure the housing to the wall with mounting bolts.

4.3.2 Installation Procedures

4.3.2.1 Electrical preparation: the unit may have supply wires run from either (a) behind the unit through the wall, or (b) below the unit using an external conduit through the bottom. Holes in the back and bottom have been provided for this purpose (See Figure on Page 23).

4.3.2.2 Remove the top of the unit.

4.3.2.3 Mark the mounting holes. In order to comply with the Americans with Disabilities Act (ADA), the speakerphone button(s) should be positioned between 34 and 48 inches from grade level. Consult an ADA specialist in your area to verify local and federal guidelines.

4.3.2.4 Drill all marked holes.

4.3.2.5 Install the housing. Four anchors of appropriate size and type should be used to fasten the housing to the wall (see Figure 3 on Page 14).

IMPORTANT: If wiring is being supplied from the back, ensure that the conduit is aligned at this time.

4.3.2.6 Reattach the top.

4.3.3 Electrical Wiring

4.3.3.1 Ground – The ground (green) wire should be stripped and fastened to the supplied grounding lug.

4.3.3.2 24V AC supply – Using the proper crimping tool, attach a #8 fork to each of the incoming power wires and fasten them to the terminal screws labeled “Line” and “Neutral.”

4.3.3.3 120/240V AC supply – Using the proper crimping tool, attach a #8 fork to each of the incoming power wires and fasten them to the correct terminals as labeled on the

transformer. After completing the wire connections, install the supplied terminal covers (see Figure on Page 23).

4.3.4 Communications Wiring

4.3.4.1 Have category 3 or higher 4 pair cable terminated to a RJ45 applying TIA/EIA T568-B specifications.

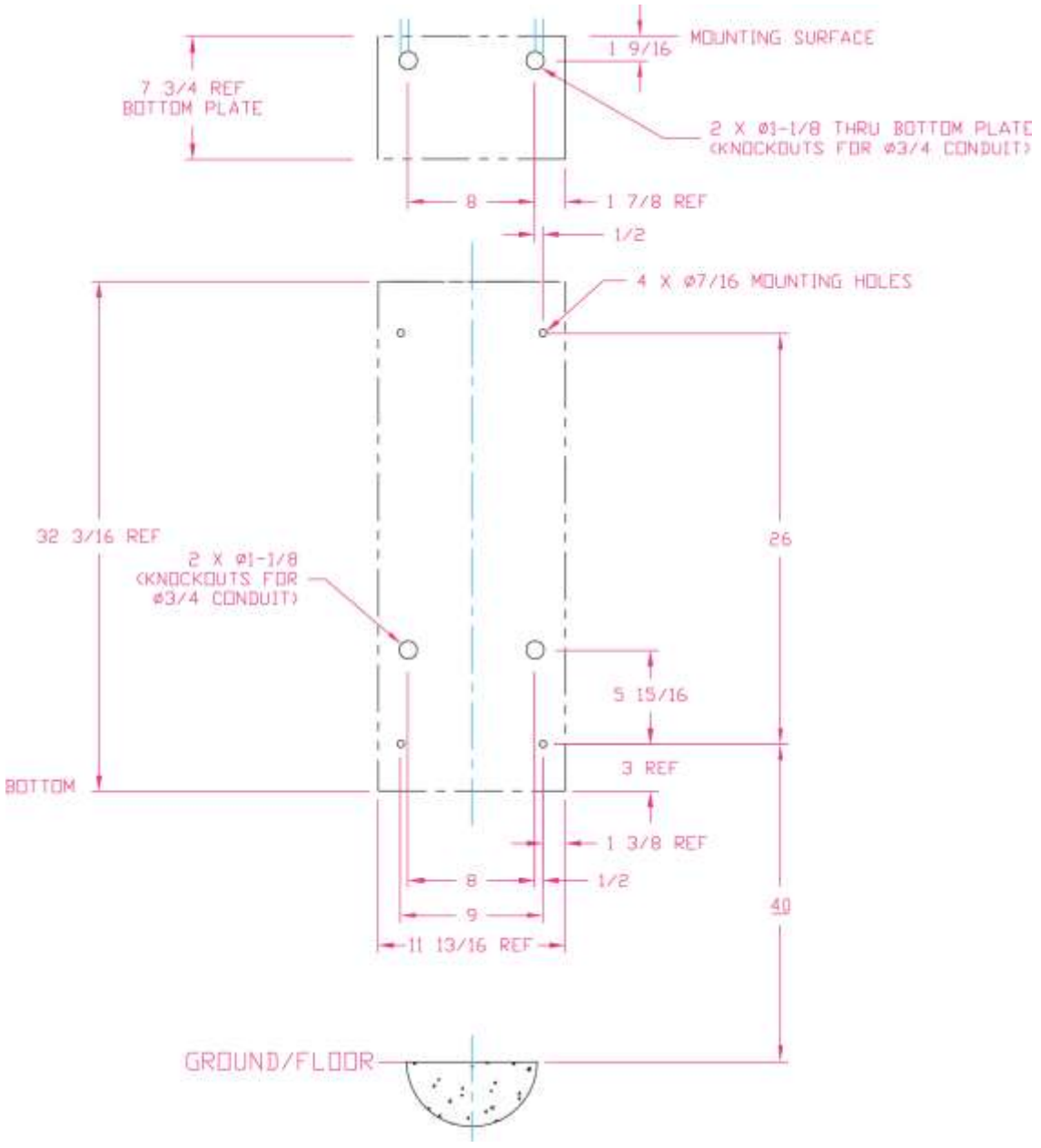


Figure 3

4.4 WM-180° Wall Mount Speaker Installation

4.4.1 Tools Required

- Ladder – to reach mounting height.
- Security bit - to remove phone to access mounting holes.
- ½-inch concrete bit – to drill holes for the mounting anchors for the mounting bolts.
- 9/16” socket set - to secure the housing to the wall with mounting bolt.

Note: If unit does not include an IP or Analog controller board, then it must be located near an IA4100 or IP5000 speakerphone for the 20-foot supplied PAS cables to reach it.

****See included drawing for anchor bolt and conduit locations.***

4.5 Installation with Controller Board

4.5.1.1 Supply 24V AC to Power Manifold (see Figure on Page 22).

4.5.1.2 Supply phone line to phone port if the unit has an analog controller board, or Ethernet IP connection to LAN port if it has an IP controller board.

4.5.1.3 Reference IA4100 Admin and User Guide for analog controller board programming.

4.5.1.4 Reference IP5000 Admin and User Guide for IP controller board programming.

4.5.1.5 Code Blue guides are located at codeblue.com > support > downloads.

4.6 Installation without Controller Board

4.6.1.1 Supply 24V AC to Power Manifold.

4.6.1.2 See attached wiring diagram for connecting the PAS Audio Cable and PAS Control Cable to the nearby IA4100 or IP5000 speakerphone.

4.6.1.3 Reference IA4100 Admin and User Guide for analog controller board programming.

4.6.1.4 Reference IP5000 Admin and User Guide for IP controller board programming.

4.6.1.5 Code Blue guides are located at codeblue.com > support > downloads.

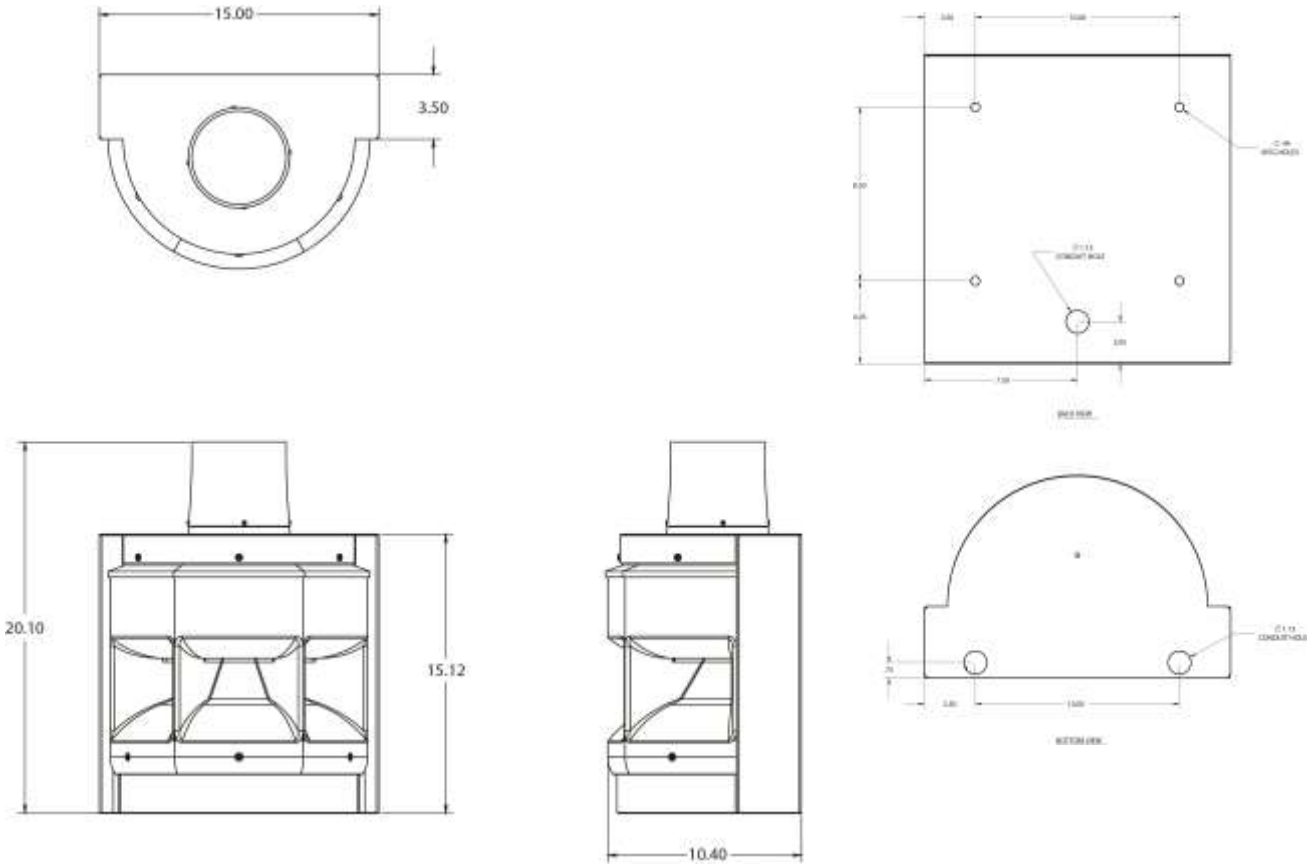


Figure 4

5 Software Configuration

5.1 Blue Alert® MNS

Designed specifically for schools, hospitals, corporate and municipal campuses looking for an efficient way to detect and respond, Blue Alert MNS (Mass Notification System) fills a need in the marketplace for an incident response solution that is both comprehensive and cost-effective. Blue Alert MNS provides emergency notifications over audio, visual and messaging platforms at the touch of a button. The result is a sophisticated software solution that quickly informs and directs people in emergency situations. Blue Alert MNS is available in two editions, Audio/Visual and Messaging, or together in the Blue Alert MNS Professional Package.

5.2 Blue Alert® EMS

Blue Alert EMS (Event Management System) handles all incoming emergency and non-emergency events with an easy to use Graphical User Interface (GUI). Effectively utilize EMS for remote operation of Code Blue emergency communication devices. Open gates and AED access doors, turn LED beacon/strobe lights on or off, transfer calls to the Public Address System to make area-wide announcements and incorporate other ancillary devices and applications. Have a camera connected to your Code Blue unit or one mounted nearby? Simply integrate EMS with your CCTV system for instant video when the units are activated. Blue Alert EMS utilizes an advanced API for efficient integration with third party applications.

5.3 ToolVox® UPD

ToolVox UPD (Unit Programming & Diagnostics) software provides a user-friendly, web-based GUI (Graphical User Interface) for the administration of all Code Blue units.

Unit Programming, UPD's unique phone management feature, allows the user to easily establish the functionality desired on one phone and copy all settings to additional units as needed. In addition, audio files can be created at a PC and stored on the server. Different messages can then be uploaded to each phone or the same audio file can be used on multiple phones, eliminating the need to call each phone individually and re-record messages. Once settings are complete, simply "Click to Program," or select assorted units and choose "Program All Units" to apply operational parameters.

The Diagnostic section of the software package is capable of testing all on-site Code Blue units for functionality at any specified time daily, weekly or on a specified day and time. This flexibility tailors testing at predetermined intervals to confirm the phones are working 24/7.

Immediate fault reporting via multiple email addresses guarantees minimum response time to any operational issues. Route an email to an SMS server and your on-call technician receives a text on their cell phone for immediate deployment, ensuring maximum up time of your units.

6 Architectural Overview

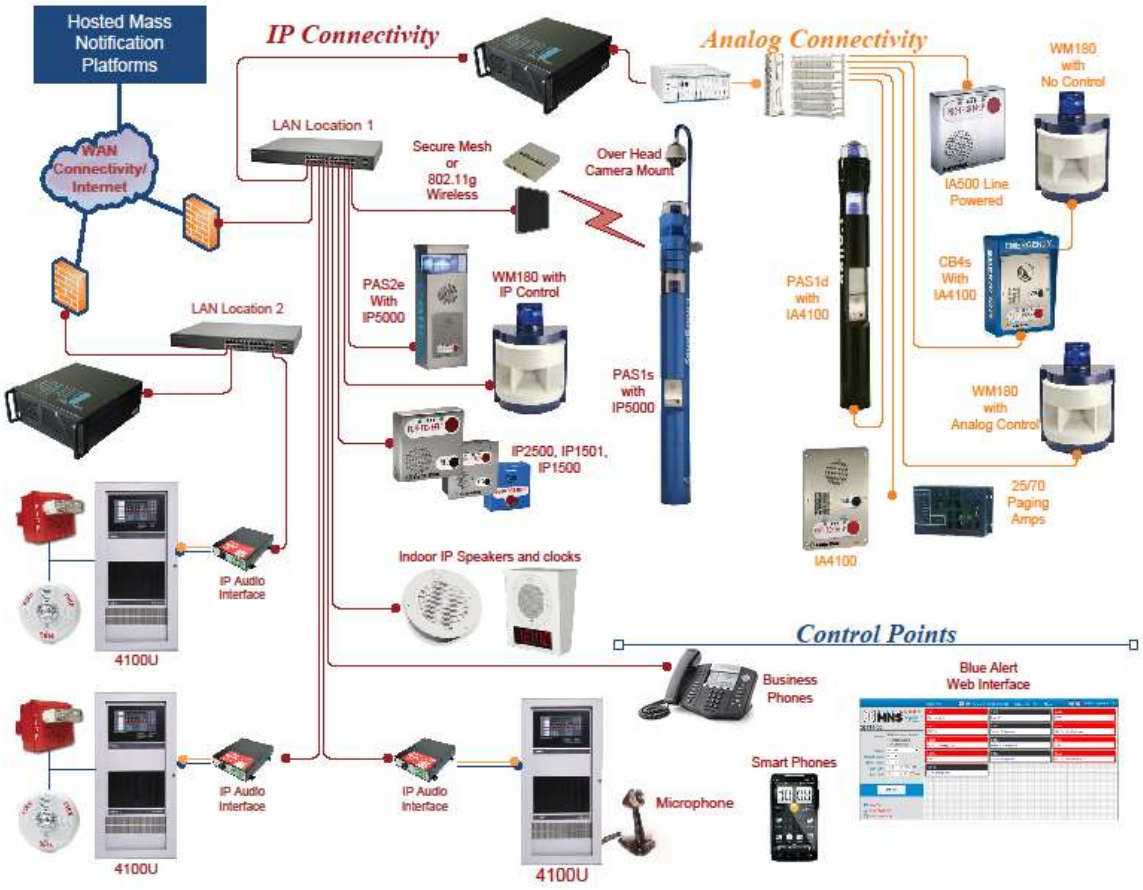


Figure 5

7 Wiring Diagrams

7.1 WM-180° PAS

Controller wiring diagram

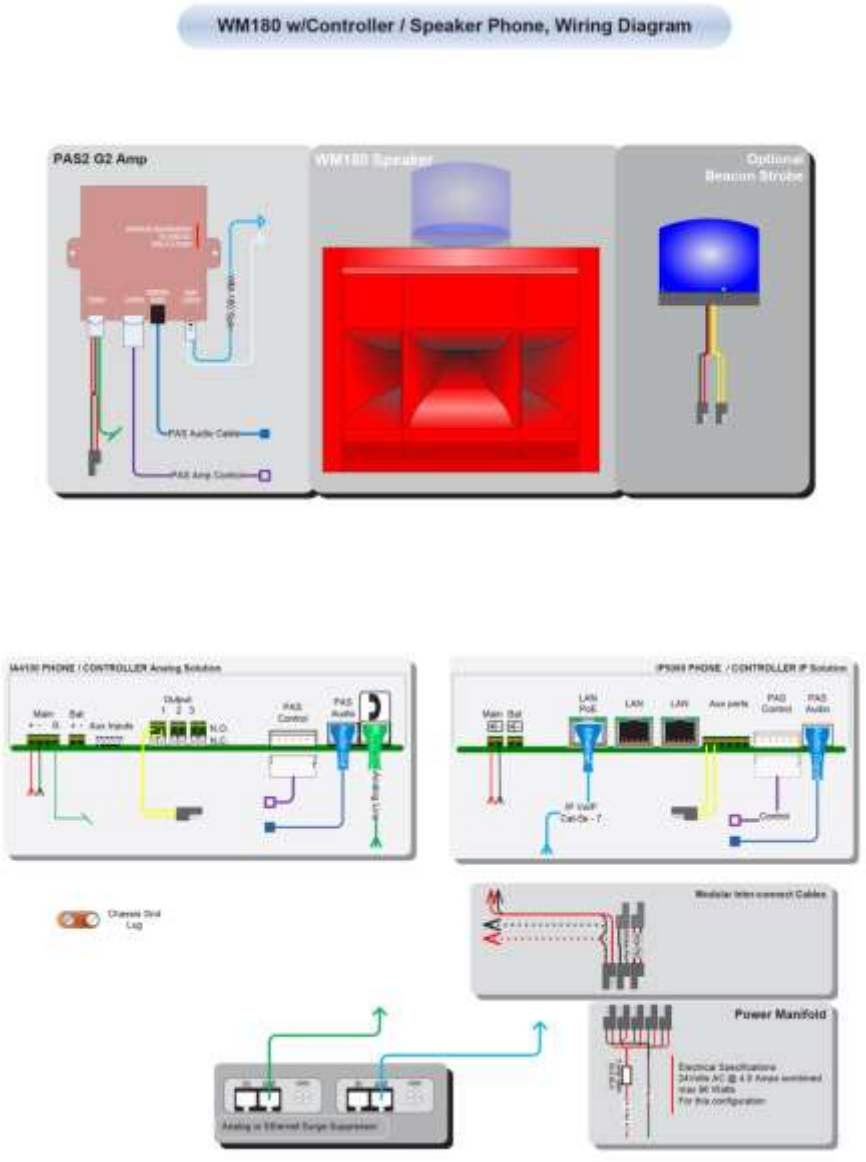


Figure 6

7.2 CB 2-e with Public Address

Wiring Diagram

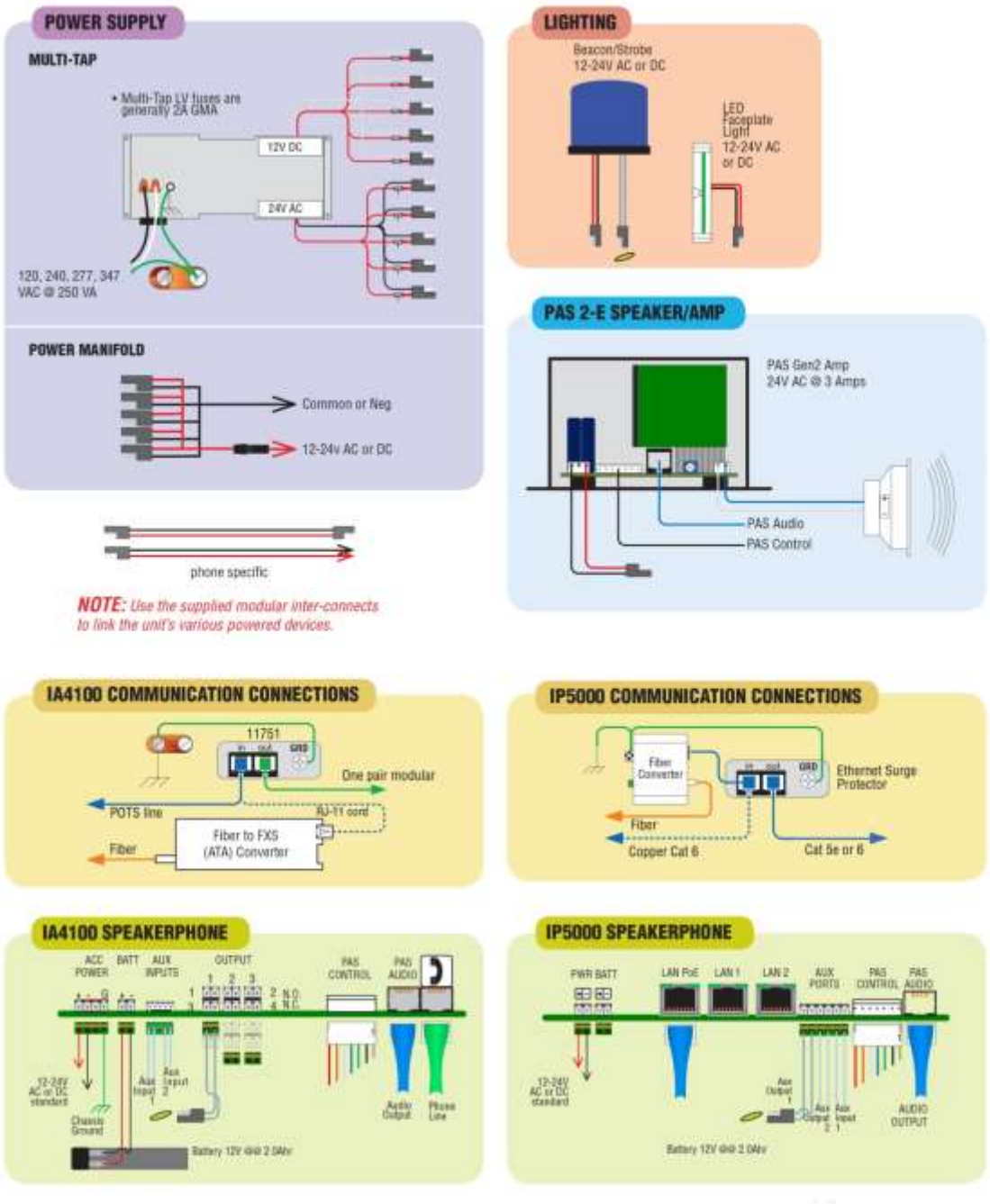


Figure 7

7.3 CB 1 Series and CB 5-s with Public Address and 360° Retrofit Wiring Diagram 1

7.3.1 PAS 1 – Generation 2 Rev. 1

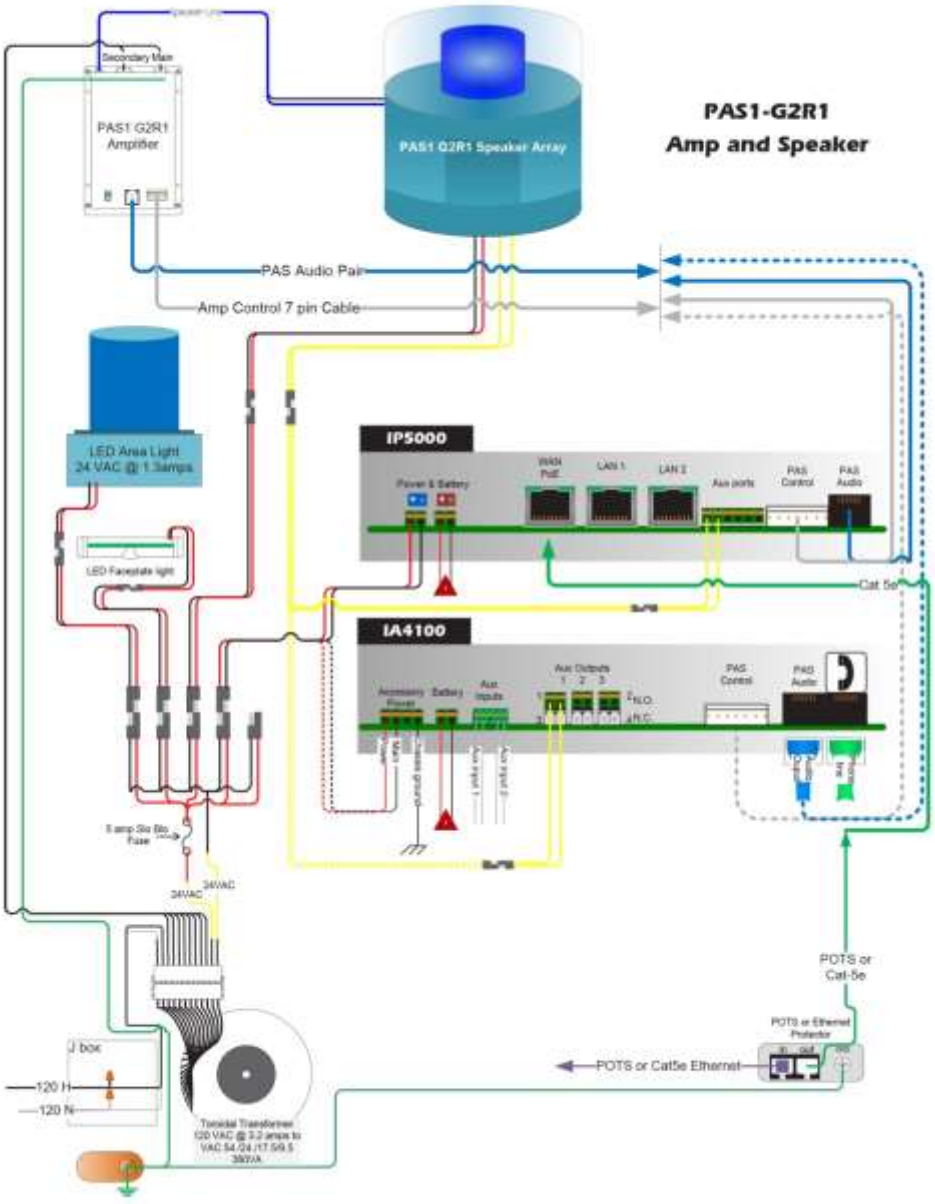


Figure 8

7.4 CB 1 Series and CB 5-s with Public Address and 360° Retrofit Wiring Diagram 2

7.4.1 PAS Generation 2 Rev. 2

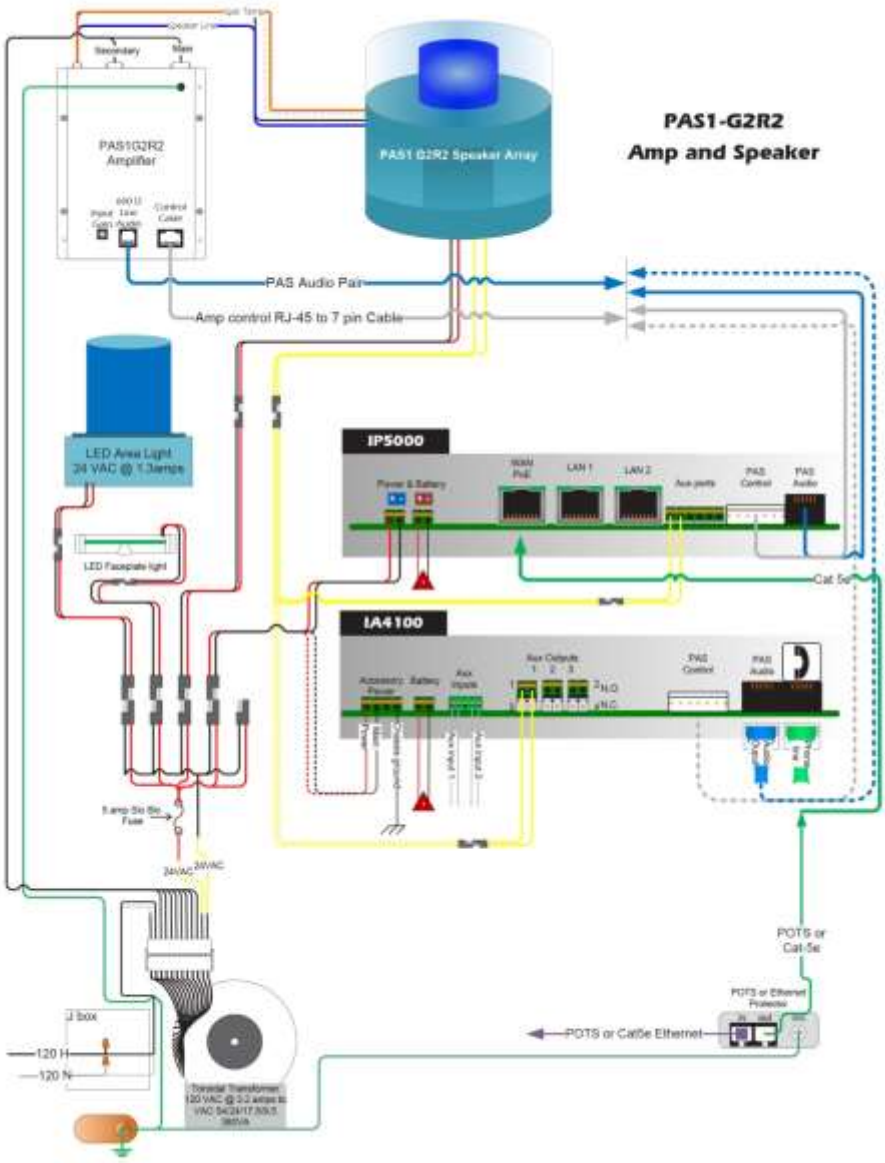


Figure 9

7.5 Detailed PAS 1 Power Schematic

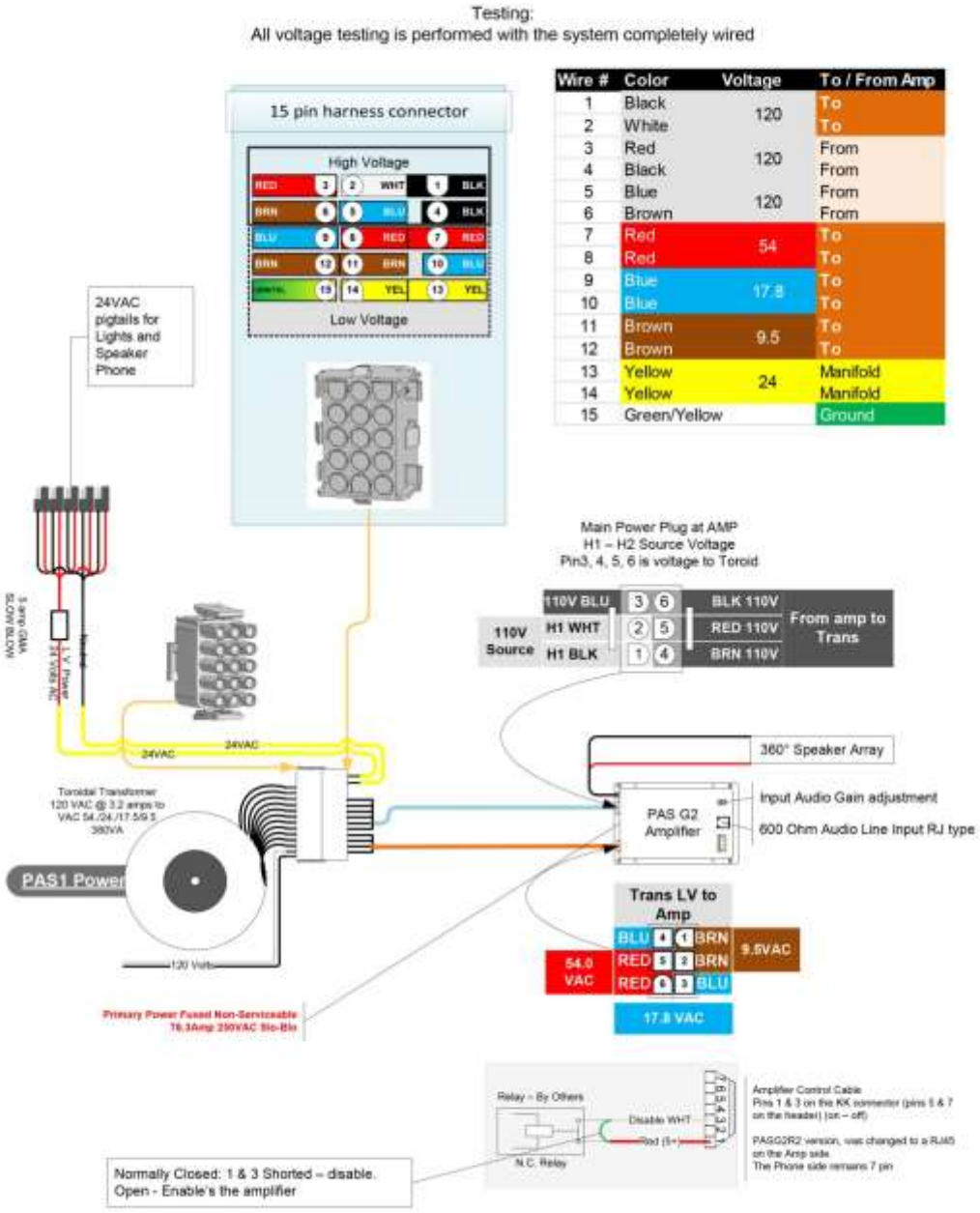


Figure 10

8 Troubleshooting

8.1 General Issues

Please contact Code Blue Technical Support if you do not see your issue below.

8.1.1 PAS not working

8.1.1.1 Remove the control cable from the amp. This will turn the amp on at all times. Try a new test call.

8.1.1.2 Test power from the transformer to the amp.

8.1.2 Strobes not working

8.1.2.1 Check the 5 amp slow blow inline fuse between the transformer and 5-finger manifold.

8.1.2.2 Check power connector at the 5 finger manifold and the red/black power wire from the strobe.

8.1.2.3 Short the yellow relay wires from the strobe to test strobe functionality. If the strobe flashes, check programming in the IA4100/IP5000 speakerphone.

8.1.3 No power to unit

8.1.3.1 For CB 1 or 5 units, verify that you have 120V AC to the transformer.

8.1.3.2 For CB 2-e units, verify that you have either Hi-Voltage to the power brick or 24V AC to the unit if low voltage only.

8.1.3.3 For WM-180° units, verify you have 24V AC to the unit

8.1.4 Volume too low/loud on amp

8.1.4.1 First, adjust the volume in the IA4100/IP5000 programming. On the IA4100, the in-call command for increasing the volume is 28. To decrease the volume, the in-call command is 29. On the IP5000, the Public Address Gain can be changed under hardware settings.

8.1.4.2 The input gain also can be adjusted manually on the amplifier using the input gain dial.

8.1.5 Advanced Issues

8.1.5.1 For advanced trouble shooting, please email techsupport@codeblue.com or call 800-205-7186, Opt. 3.

9 Spare Parts

9.1 CB 1 Series, CB 5-s and 360° PAS Retrofit Kit

Part Number	Part Description	Notes
40010	Amp Assembly	Contains amp, toroid transformer and wire harness
40007	Dome Top Assembly	Contains dome top and active vent
40159	Strobe	24V combination blue beacon/strobe
40101	5-Finger Manifold	Contains manifold and 5 amp fuse

9.2 CB 2-e with Public Address

Part Number	Part Description	Notes
40009	Amp Assembly	Contains amp and amp harness
40159	Strobe	24V combination blue beacon/strobe
40101	5-Finger Manifold	Contains manifold and 5 amp fuse

9.3 WM-180° PAS Wall Mount

Part Number	Part Description	Notes
40009	Amp Assembly	Contains amp and amp harness, if needed
40101	5-Finger Manifold	Contains manifold and 5 amp fuse

10 Download Information

Code Blue now has a centralized location where you can find installation, setup, information, configuration and operation instructions.

1. Centry® Administrator Guide: www.codeblue.com/resources/guides
2. CB 1 Series Administrator Guide: www.codeblue.com/resources/guides
3. CB 2 Series Administrator Guide: www.codeblue.com/resources/guides
4. CB 4 Series Administrator Guide: www.codeblue.com/resources/guides
5. CB 5 Series Administrator Guide: www.codeblue.com/resources/guides
6. CB 9 Series Administrator Guide: www.codeblue.com/resources/guides
7. CB RT Administrator Guide: www.codeblue.com/resources/guides
8. Phone Enclosures Administrator Guide: www.codeblue.com/resources/guides
9. Stainless Steel Maintenance Guide: www.codeblue.com/support
10. IA4100 Administrator Guide: www.codeblue.com/resources/guides
11. IP5000 Administrator Guide: www.codeblue.com/resources/guides
12. IP1500/2500 Administrator Guide: www.codeblue.com/resources/guides
13. ToolVox® X3 Administrator Guide: www.codeblue.com/resources/guides
14. Public Address Administrator Guide: www.codeblue.com/resources/guides
15. Blue Alert® MNS User Guide: www.codeblue.com/resources/guides
16. Blue Alert® EMS User Guide: www.codeblue.com/resources/guides
17. IP1500/IP2500 Firmware: www.codeblue.com/support/firmware
18. IP5000 Versions 1.X & 2.X Firmware: www.codeblue.com/support/firmware

For Legacy Product Information:

www.codeblue.com/legacy-products

These guides should contain all the information needed for your application. If further information is required, please contact **customerservice@codeblue.com**.