



Notifier DA Series BOWS

INSTALLATION & PROGRAMMING MANUAL

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Installation Precautions

Adherence to the following will aid in problem-free installation with long-term reliability:

WARNING - Several different sources of power can be connected to the fire alarm control panel.

Disconnect all sources of power before servicing. Control unit and associated equipment may be damaged by removing and/or inserting cards, modules, or interconnecting cables while the unit is energized. Do not attempt to install, service, or operate this unit until manuals are read and understood.

Verify that wire sizes are adequate for all initiating and indicating device loops. Most devices cannot tolerate more than a 10% voltage drop from the specified device voltage.

Like all solid state electronic devices, this system may operate erratically or can be damaged when subjected to lightning induced transients. Although no system is completely immune from lightning transients and interference, proper grounding will reduce susceptibility. Overhead or outside aerial wiring is not recommended, due to an increased susceptibility to nearby lightning strikes. Consult with the Technical Services Department if any problems are anticipated or encountered.

Disconnect AC power and batteries prior to removing or inserting circuit boards. Failure to do so can damage circuits.

Remove all electronic assemblies prior to any drilling, filing, reaming, or punching of the enclosure. When possible, make all cable entries from the sides or rear. Before making modifications, verify that they will not interfere with battery, transformer, or printed circuit board location.

Do not over tighten screw terminals. Over tightening may damage threads, resulting in reduced terminal contact pressure and difficulty with screw terminal removal.

This system contains static-sensitive components. Always ground yourself with a proper wrist strap before handling any circuits so that static charges are removed from the body. Use static suppressive packaging to protect electronic assemblies removed from the unit.

Follow the instructions in the installation, operating, and programming manuals. These instructions must be followed to avoid damage to the control panel and associated equipment. FACP operation and reliability depend upon proper installation.

This equipment must be correctly programmed and installed to suit the specific application. Please ensure correct operational parameters are set prior to commissioning. If further details on programming options are required, please consult the programming manual or contact our helpful technical support personnel.

EMC WARNING:

This equipment may radiate radio frequency energy. It may also be affected by radio frequency energy and, if not installed and operated in accordance with the manufacturers instructions, may cause interference to radio communications. It has been tested and found to comply with the Class A radiated and conducted EMI requirements of AS/NZS CISPR 22:2006.

Radio communication devices should not be used in the vicinity of fire panels or associated ancillary devices and systems.

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Section 1 About this Manual

1.1. Notes, Cautions and Warnings

This manual contains notes, cautions and warnings to alert the reader as follows:



NOTE: Supplement information for a topic such as tips and references.



CAUTION: Information about procedures that could cause programming errors, runtime errors, or equipment damage.



WARNING: Indicates information about procedures that could cause irreversible equipment damage, irreversible loss of programming data or personal injury.

1.2. Related Documentation

Title	Document Number
DA-TGEN Installation Sheet	DOC-03-005
DA-30 Installation Sheet	DOC-03-006
DA-60 Installation Sheet	DOC-03-007
DA-120 Installation Sheet	DOC-03-008
Pre-Amplifier Installation Sheet	DOC-03-009
SDM-4 - 4 Way Speaker Distribution Module Installation Sheet	DOC-03-010
CMM-2 Installation Sheet	DOC-03-011
Strobe Sounder Interface Manual	DOC-01-002
1-4 Zone paging console Install Sheet	DOC-03-029

Section 2 System Overview

2.1. Introduction

The Notifier DA range of Building Occupant Warning Systems (BOWS) is used to warn building occupants of an emergency and aid in the evacuation of building as per AS1670.4 requirements.

There are 3 types of DA available:

- DA-30 30W speaker load.
- DA-60 60W speaker load.
- DA-120 120W speaker load.

2.2. Features and Specifications

Features

- High efficiency digital amplifier design results in low power consumption.
- Protection against overloaded speaker lines and short circuit connections.
- Choice of 17 standard tones.
- Choice of 9 standard messages.
- Message inputs to play a lockdown message, test message, false alarm message or a chime.
- Expansion available for 2 custom messages.
- Can network up to 8 together for easier installation and synchronisation of tones.

Specifications

• 21.6-30 VDC input supply voltage.

Device	Standby Current ¹	Alarm Current at Rated Output ^{1, 2}	Output Voltage	Power Output
DA-30 ³	45mA	1.7A	100 V_{RMS}	30 W
DA-30 ⁴	70mA	1.8A	100 V_{RMS}	30 W
DA-60	140mA	3.5A	100 V_{RMS}	60 W
DA-120	140mA	7.0A	100 V_{RMS}	120 W
SDM-4	25mA	25mA	N/A	N/A

¹ System setup with a DA-controller, Pre-amplifier, full load and EOL connected across speaker terminals. Background music is disabled.

² Outputing tone #16 with the rated power output down the speaker line activated via the CIE input.

³ Values relate to the DA-30 with board revisions 2019-01-0A through to 2019-01-0E

⁴ Values apply to DA-30 from board revisions NI-2019-01-1B and beyond

2.3. System Diagram

A block diagram of a standalone DA-BOWS with separate DA Controller and Pre-Amplifier is shown in Figure 2-1.

A Speaker Distribution Board is used when multiple speaker lines to different zones are required to be run off the one amplifier; however this is not necessary if only one line of speakers is run from an amplifier.

An example network system diagram with separate DA Controller and Pre-Amplifier is shown in Figure 2-3.

An example network system diagram with Integrated DA Controller and Pre-Amplifier is shown in Figure 2-4.



Figure 2-1 - Diagram of a Standalone Non-Networked DA-BOWS (separate DA controller and Pre-Amplifier)







Figure 2-3 - Example Network System Diagram with separate DA controller and Pre-Amplifier



2-4 Example Network System Diagram with integrated DA controller and Pre-Amplifier

DA Series BOWS **2.4. Available Kits**

The kits displayed in Table 2-1 are available from Notifier:

Title	Notifier Part #
DA-30 – 30W BOWS amplifier main board (NI-2019-01Variant 1) c/w interconnect cable, EOL, stand-offs and screws	ASY-02-002
DA-60 – 60W BOWS amplifier main assembly c/w interconnect cable, EOL, stand-offs and screws	ASY-02-003
DA-120 – 120W BOWS amplifier main assembly c/w interconnect cable, EOL, stand-offs and screws	ASY-02-004
DA-PA/MIC Microphone and microphone pre-amp c/w stand-offs etc	ASY-01-004
SDM-4, Speaker Distribution Module Kit	ASY-01-005
CMM-2 – Custom Message Module c/w PC connect audio cable	ASY-01-006
FIP/30W – 30 watt BOWS amplifier kit to fit to the side of IFS-2600/AFP-2800/AFP-2802	ASY-01-010
DA-DISP/A — Display Kit to suit 18U/28U/40U	ASY-01-014
DA-DISP/B — Display Kit to suit CAB600/CAB900	ASY-01-015
DA-DISP/C – Display Kit without PA	ASY-01-017
DA-DISP/D – 4 Zones Display Kit	ASY-01-018

Table 2-1

Section 3 Installation

3.1. DA-30 - 30W Amplifier

Complete the following steps to install the DA-30 CPU board:

1. Mount the DA-30 board in a CHS style mounting plate as shown in Figure 3-1.



Figure 3-1 - DA-30 on CHS-3L

2. With the Panel powered down connect in the 24V battery backed power supply. A diagram of the DA-30 board connections is shown in Figure 3-2.



CAUTION: Leave the panel powered down until all hardware is installed.



NOTE: EIA-485 communication is not yet supported by this device. This may change in the future.

3. Connect the alarm connection from a monitored 24V output on the panel's termination board. If the end of line resistor is to be $4.7k\Omega$ then place a jumper shunt on the CIE EOL pins.



NOTE: It is recommended that the DA-BOWS be the only device on the monitored output from the panel so that it uses the on-board EOL resistor. Fault reporting from the amplifier is done by opening circuiting the EOL resistor. If the amplifier is not using the on-board EOL resistor, faults on the amplifier will not be reported to the panel.

- 4. Connect a push button to activate the chime if required.
- 5. Connect a push button to activate the lockdown message if required.
- 6. See Sections 3.3 3.14 for installing ancillaries to the device.
- 7. See Section 3.4 for speaker installation.
- 8. When the hardware installation is complete, set the amplifier volume as per sections 4.8 0 and then program the device shown in Section 5.



Figure 3-2 - DA-30 Connection Diagram

3.2. DA-60/120 – 60W/120W Amplifier

Complete the following steps to install the DA-60/120 CPU board:

1. Mount the DA-60/120 board to the CHS mounting plate shown in Figure 3-3 and Figure 3-4.



Figure 3-4 - DA-120 on CHS-3L

2. With the Panel powered down connect in the 24V battery power supply. Refer to the diagram of the DA-60/120 board connections is shown in Figure 3-5 and Figure 3-6.



CAUTION: Leave the panel powered down until all hardware is installed.



NOTE: EIA-485 communication is not yet supported by this device. This may change in the future.

3. Connect the alarm from a monitored 24V output on the panel's termination board. If the end of line resistor is to be $4.7k\Omega$ then place a jumper shunt on the CIE EOL pins.



NOTE: It is recommended that the DA-BOWS be the only device on the monitored output from the panel so that it uses the on-board EOL resistor. Fault reporting from the amplifier is done by opening circuiting the EOL resistor. If the amplifier is not using the on-board EOL resistor, faults on the amplifier will not be reported to the panel.

- 4. Connect a push button to activate the chime if required.
- 5. Connect a push button to activate the lockdown message if required.
- 6. See Sections 3.3 3.14 for installing ancillaries to the device.
- 7. See Section 3.4 for speaker installation.
- 8. When the hardware installation is complete, set the amplifier volume as per sections 4.8 10 and then program the device shown as per Section 5.



Figure 3-5 - DA-60 Connection Diagram



Figure 3-6 - DA-120 Connection Diagram

3.3. Connecting Background Music (BGM)

Connect the audio signal supplying the background music to the BGM+ and BGM- terminals on the amplifier. The cable (Notifier Part# CA-02-001) supplied with CMM-2 can be used to plug into a 3.5mm audio output from a computer or other audio device. Connect the shield to the BGM- terminal. Connect the red and green cable together into the BGM+ terminal.



WARNING: Only connect an audio signal less than $2V_{RMS}$ as the BGM audio signal. Signals from large amplifiers and speaker outputs from other DA-amplifiers may cause irreversible damage to the system. Line level signals from PCs or MP3 players are acceptable.



Connect a switch to enable the background music audio. See Figure 3-7

Figure 3-7 - BGM Signal Connections

3.4. Speaker Installation

For the line monitoring to work correctly all speakers must be coupled with a capacitor on the input side of the step-down transformer as per Figure 3-8. The value of the capacitor can be found from the manufacturer of the speakers. The capacitor and transformer are provided when purchasing speakers from Notifier. Check that the tapping of the speaker is set for your required output level and the total loading does not exceed the power rating of the amplifier.



Figure 3-8 - Speaker Connection to Speaker Output of Amplifier

3.5. 4- Way Speaker Distribution Module (SDM-4)

The four way speaker distribution module is used to distribute the speaker line to up to 4 areas of a building. It does not amplify the signal. It provides separate monitoring to each output line and indicates their fault condition via on board LEDs and fault relays. Each output can be disabled as required via an external switch. Complete the following steps to install the SDM-4 board:



1. Mount the CPU board to the CHS mounting plate as shown in Figure 3-9.

Figure 3-9 - SDM-4 on CHS-3L Chassis

- 2. With the Panel powered down, connect the 24V battery backed power supply. A diagram of the SDM-4 board connections is shown in Figure 3-10. The SDM-4 must be connected to the same 0V as the amplifier providing the audio.
- 3. Connect the speaker line from the amplifier powering the speaker lines. The speaker cable must be double insulated and kept separate from other wiring assemblies in the panel.



CAUTION: The polarity of the DA-BOWS speaker line output is important. Negative from the amplifier must be connected to the negative of the speaker line input and likewise for the positive line.

- 4. Connect the speaker output lines to the distributed speakers as required. Fit a $47k\Omega$ 1W EOL resistor for each line, even if there are no speakers connected to the line.
- 5. If required, connect a switch to disable each output line.



Figure 3-10 - SDM-4 Connection Diagram

3.6. DA Controller

Attach the DA-Controller as shown in Figure 3-11.



Figure 3-11 – DA Controller Board Mounting

1. Mount the DA controller to the metalwork by removing the knob and nut from the rotary switch and place the rotary switch axle through the larger rotary switch hole on the metalwork, lining up the LED holes and the bottom two mounting screw holes.

$ \equiv $

NOTE: Before securing the board to the metalwork, check the switch is configured to move through all required positions. This is determined by the guide pin on the washer under the shaft of the switch. The guide pin should be in the hole between the markings 4 and 5.

- 2. If a pre-amp is not to be installed use two M3 screws to secure the DA controller to the metalwork. If a pre-amplifier is required refer to section 3.8
- 3. Add the controller label to the front of the metalwork.
- 4. Add the nut to the rotary switch shaft and tighten

5. Attach the knob to the rotary switch shaft. The device is installed correctly, when the knob is in the first position (as far counter clock-wise as possible), the knob should point to the top right, 45° from the vertical.



NOTE: Check that the knob can be moved from the off position to the evacuation position and no further. If it cannot, the guide washer on the switch is in the wrong position. See the previous note.

- 6. To remotely activate the false alarm message, connect an external button across the false alarm message jumper pins on the display board as per Figure 3-12.
- 7. To remotely activate the test message, connect an external button across the test message jumper pins on the display board as per Figure 3-12.
- 8. If not using a pre-amplifier, connect a 20-way ribbon cable between the display board connection on the CPU board and the 20 way connector on the display board. If a pre-amplifier is going to be installed, set aside the 20-way cable off as it will be used in a later section.



Figure 3-12 - Connections for Buttons on rear of DA Controller

3.7. DA – Pre-Amp Controller (DA-PAC)

- 1. Remove the existing DA controller
- 2. Attach the DA Pre-Amp Controller as shown in Figure 3-13.



Figure 3-13 – DA Pre-Amp Controller Board Mounting

3. Mount the DA-PAC the metalwork by removing the knob and nut from the rotary switch and place the rotary switch axle through the larger rotary switch hole on the metalwork, lining up the LED holes and the bottom two mounting screw holes.



NOTE: Before securing the board to the metalwork, check the switch is configured to move through all required positions. This is determined by the guide pin on the washer under the shaft of the switch. The guide pin should be in the hole between the markings 4 and 5.

- 4. Use two M3 screws to secure the DA-PAC to the metalwork.
- 5. Add the controller label to the front of the metalwork.
- 6. Add the nut to the rotary switch shaft and tighten.
- 7. Attach the knob to the rotary switch shaft. The device is installed correctly, when the knob is in the first position (as far counter clock-wise as possible), the knob should point to the top right, 45° from the vertical.
- 8. Connect the supplied microphone to the 5 way microphone connector on bottom of the DA-PAC board.



NOTE: Check that the knob can be moved from the off position to the evacuation position and no further. If it cannot, the guide washer on the switch is in the wrong position. See the previous note.

- 9. To remotely activate the false alarm message, connect an external button across the false alarm message jumper pins on the display board as per Figure 3-14.
- 10. To remotely activate the test message, connect an external button across the test message jumper pins on the display board as per Figure 3-14.
- 11. Ensure the Microphone selector Jumper remains fitted when the DA-PAC board is not connected to the Microphone Selector board via the Microphone Selector.



NOTE: When connecting the DA-PAC to the Microphone Selector Board, remove the Microphone Selector Jumper and unplug the Microphone from the DA-PAC Microphone pins.



Figure 3-14 - Connections for Buttons on rear of DA- PAC

3.8. Pre-Amp and Microphone



Figure 3-15 - Pre-amplifier Board on DA Control Board and Metalwork

- 3. Remove the two screws holding the front DA control board card to the metalwork.
- 4. Use two 12mm M3 standoffs to re-fasten the DA control board to the metalwork.
- 5. Fasten another two 12mm M3 standoffs to the top two mounting holes on the DA control board, using two M3 flanged nuts to fasten it.

- 6. Mount the pre-amplifier board on the four standoffs, lining up the socket underneath the Preamp with the header on the DA control board. Screw in four M3 12mm screws to fasten the pre-amp to the standoffs.
- 7. Connect the supplied microphone to the 5 way microphone connector on the top of the preamp board.
- 8. Connect a 20 way ribbon cable between the pre-amp board and the 20 way front display header on the CPU board.

3.9. Alternate Microphone

An alternate microphone can be connected to the microphone terminal on the CPU board of the amplifier. A Push to Talk (PTT) switch to activate the microphone must be placed across the terminals as shown in Figure 3-16. The external microphone must be capable of producing 0.775VRMS when in operation. A microphone with a lower output will need to be boosted by a pre-amplifier and then wired from the pre-amplifier to the microphone terminals shown in Figure 3-16.

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NOTE: Only 1 microphone should be connected to any amplifier, either through the microphone input or sourced from the network.



NOTE: Refer to DOC-03-029 – 1-4 Zone paging console Install Sheet for details on installing and configuring the Notifier paging console.



WARNING: Only connect an audio signal less than $2V_{\text{RMS}}$ as the microphone audio signal. Signals from large amplifiers and speaker outputs from other DA-amplifiers may cause irreversible damage to the system. Line level signals from PCs or MP3 players are acceptable.



Figure 3-16 - Alternate Microphone Connections



WARNING: This input must not be connected to any remote microphone due to its priority over the system.

3.10. Custom Message Module (CMM-2)

Install a custom message module (CMM-2) for an additional 2 messages.

- 1. Ensure the amplifier is powered down.
- 2. Insert the CMM-2 into the amplifier as shown in Figure 3-17. The CMM-2 must have the white corner indicator furthest away from the seven segment display.
- 3. Record messages as per Section 5.16.





3.11. Strobe Connection

Connect the strobe card as shown in Figure 3-18 using a modified 6 way cable. See the Strobe Card Manual (DOC-01-002) for more information on its operation.



Figure 3-18 - Strobe Interface Connection

3.12. Chime and Lockdown Activation Connection

Connect a normally open momentary push button across the terminals as shown in Figure 3-19. A momentary push button is recommended as you do not need to have the button down for the duration of the message, only to activate it.



Figure 3-19 - Push Buttons for Chime and Lockdown

3.13. Network Connections

To network up to 8 amplifiers together, a 20 way ribbon cable must connect the 'out' bus port to the 'in' bus port on the next amplifier, as shown in Figure 3-20. This is repeated up until the last device on the network. The last device on the network must have a jumper shunt placed across the top two pins on the network 'out' 20 way header as shown in Figure 3-20.

For the networked DA-30s, DA-60s and DA-120s to operate successfully, the network cabling connecting the DAs must be enclosed within the Fire Cabinet housing the DAs.



NOTE: Networked devices must be specifically programmed to their function, see Section 6. Synching is automatic when the messages and tones of the networked devices are the same.



Figure 3-20 - Example of three Amplifiers Networked Together

3.14. Connecting a pre-amplifier to the Microphone Selector

Figure 3-21 shows how to connect the pre-amplifier to the microphone selector. The microphone selector can be used to page single zones or all zones from the one microphone.



Figure 3-21 - Microphone Selector and Pre Amplifier/DA-PAC on Mounting Plate

1. Remove the knob and nut from the switch of the microphone selector.

Set the switch stop washer to the correct position see

- 2. Figure 3-22.
- 3. Use two 12mm M3 standoffs to fasten the microphone selector to the standoffs on the metalwork.
- 4. Screw the nut onto the shaft of the switch to help secure it to the metalwork.

5. Fit the knob of the switch to the shaft. Check that it indicates the right position and can be turned to the available options.



Figure 3-22 - Switch View of Microphone Selector Showing Washer Settings

- 6. Fasten another two 12mm M3 standoffs to the top two mounting holes on the microphone selector using two M3 flanged nuts to fasten it.
- 7. Mount the DA-PAC board to the four standoffs, lining up the socket underneath the Preamp with the header on the microphone selector. Screw in four M3 12mm screws to fasten the board to the standoffs.
- 8. Connect the supplied microphone to the 5 way microphone connector on the top of the Pre-Amplifier board.
- 9. Connect each amplifier to use the microphone selector by using a 6 way cable between the zone header on the microphone selector and the MIC SELECTOR header on the front display card of the amplifier for that zone. If using a slave device which by definition will not have a DA controller connected to it, it must be connected to the microphone selector via it's on board microphone terminals see Figure 3-23.

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NOTE: The amplifier connector to zone 1 of the microphone selector provides power for the pre-amplifier. The connection for Zone 1 must be connected to a front display card connected to a pre-amplifier.

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NOTE: When using a microphone selector, ensure that there are no other pre-amplifiers connected to the front displays of the amplifiers for other zones used by the microphone selector.



NOTE: For the integrated DA controller and Pre-Amplifier the *'Microphone Selector'* jumper needs to be removed from the board.



Figure 3-23 - Connecting a Standalone Device to a Microphone Selector



Figure 3-24 Connecting a Standalone Device to a Microphone Selector

Section 4 Operation

4.1. Using the DA Controller/DA-PAC

The DA controller is used to manually override the automatic function of the amplifier. There are four settings:

a. Off

This will turn the amplifier off, including background music and microphone paging, even if it has an alarm from the panel or on its network. This will also activate the fault. No audio will be played down the line except when in the CMM-2 programming mode.

b. Automatic

This will play background music (if enabled) until an alarm signal is received from the panel. Once an alarm is received, the amplifier will play the alert tone and speech message, and then it will play the evacuation tone and speech. After the preset delay, the evacuation tone and associated speech message will be played until the alarm condition is removed, or the front display is changed. Using the local microphone in this state will override any audio playing already.

c. Alert

This setting will cause the amplifier to play the alert tone and message. Using the microphone will override the alert tone and message.

d. Evacuate

This setting will cause the amplifier to play the evacuation tone and message. Using the microphone will override the evacuation tone and message.

4.2. Using the Microphone

To activate the microphone press the button on the side of the microphone. This will activate the Red Push to Talk (PTT) LED on the CPU board. This however will not work if the front display board is in the off position.

If the microphone volume is too low see section 4.9 "Adjusting the Microphone Level".

4.3. Using the Microphone Selector

The microphone selector will route your spoken message to any one of the amplifiers selected, or all of them at the same time. Select the broadcast option you desire and then operate the microphone as usual. The board which is receiving the broadcast will illuminate its PTT LED when the user holds down the microphone button.

4.4. Activating the Lockdown Message

To play the message programmed as the lockdown message, short the terminal 'LKDOWN IN' to 0V. This can be done via a relay or normally open switch. If the terminal is constantly held down, the amplifier will play the message repeatedly. It is recommended a normally open momentary pushbutton switch be used.

4.5. Activating the Chime Tone

To play the message programmed as the chime message, short the terminal 'CHIME IN' to 0V. This can be done via a relay or normally open switch. If the terminal is constantly held down, the amplifier will play the message repeatedly. It is recommended a normally open momentary pushbutton switch be used.

4.6. Activating the Test Message

There are two methods of activating the message programmed as the test message:

- 1. Using the pushbutton on the DA-CPU board labelled 'TEST'.
- 2. Shorting the terminals on the DA Controller board labelled 'TEST' shown in Figure 3-11. This can be done via a relay, switch or normally open momentary pushbutton switch. If the terminal is constantly held down, the amplifier will play the message repeatedly. If this operation is not desired, it is recommended a normally open momentary pushbutton switch be used.

4.7. Activating the False Alarm Message

There are two methods of activating the message programmed as the false alarm message:

- 1. Using the pushbutton on the DA-CPU board labelled 'FALSE ALARM'.
- 2. Shorting the terminals on the front display board labelled 'F/ALM' shown in Figure 3-11. This can be done via a relay, switch or normally open momentary pushbutton switch. If the terminal is constantly held down, the amplifier will play the message repeatedly. If this operation is not desired, it is recommended a normally open momentary pushbutton switch be used.

4.8. Adjusting the Amplifier Level

Adjust the O/P LEVEL before adjusting the MIC LEVEL or the BGM LEVEL. Using the tone that will be used in an emergency situation, play it down the speaker line by setting the front display board to that mode.

When adjusting the Output level on the pot labelled O/P LEVEL (Figure 4-1) it's recommended that the O/P level is set to the lowest level (furthest point counter clockwise) and increased slowly by turning the dial until the audio signal is can be heard clearly without distortion.



Figure 4-1 - Amplifier Level Adjustment Pots

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NOTE: The amplifier connector to zone 1 of the microphone selector provides power for the pre-amplifier. The connection for Zone 1 must be connected to a front display card connected to a pre-amplifier.

4.9. Adjusting the Microphone Level

When setting the volume for the first time on the system the main amplifier gain should be set before adjusting the MIC LEVEL.

Set the pot controlling the gain of the pre-amplifier volume control to the middle (see Figure 3-15).

Set the pot labelled 'MIC LEVEL' (Figure 4-1) to the output level required. It's recommended that the MIC level is set to the lowest level (furthest point counter clockwise) and increased slowly by turning the dial until the audio signal is can be heard clearly without distortion.

If the desired output cannot be reached;

For the Pre-Amp board increase the level on the Pre-amplifier by turning the pot counterclockwise.

For the DA-PAC increase the level on the Pre-amplifier by turning the pot clockwise.

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NOTE: When changing the level on the pre-amplifier controller when it is connected to a microphone selector, the output level of the microphone audio on all other amplifiers connected to the microphone selector should also be checked.

4.10. Adjusting the Background Music (BGM) Level

When setting the volume for the first time on the system the main amplifier gain should be set before adjusting the BGM LEVEL.

Using some background music to test, Set the pot labelled 'BGM LEVEL' (Figure 4-1) to the lowest level (furthest point counter clockwise). Continue to adjust the output level as required. Turning the pot clockwise will increase the level and turning the pot counter clockwise will decrease the level. The desired level will be reached when the background music can be heard clearly without distortion.

If the required level cannot be achieved, the source of the audio signal into the amplifier will need to be increased.



WARNING: Only connect an audio signal less than $2V_{RMS}$ as the BGM audio signal. Signals from large amplifiers and speaker outputs from other DA-amplifiers may cause irreversible damage to the system. Line level signals from PCs or MP3 players are acceptable.

Section 5 Programming

5.1. Programming Menu Overview

To access the menu, press the 'OPTION' button on the CPU board under the seven segment display. To cycle through the options press the 'OPTION' button again. Once an option is selected, press the 'UP' or 'DOWN' button to scroll through the available settings. When the current setting is selected it will remain on solid, but when the user changes the setting it will flash until the user accepts the change to that setting by pressing 'ENTER'.

The layout of the options menu is shown below:

		Mode	Accessi	ible in
		Controller	Slave	Standalone
d-:	Delay Time from Alert to Evacuate See Section 5.7 Page 43	\checkmark	X	\checkmark
↓ E I:	Tone 1 - Alert Tone Setting See Section 5.5 Page 42	\checkmark	X	\checkmark
↓ £2:	Tone 2 - Evacuation Tone Setting See Section 5.5 Page 42	\checkmark	X	\checkmark
↓ 5 I:	Speech 1 - Alert Tone Speech Message Setting See Section 5.6 Page 42	\checkmark	X	\checkmark
¥ 52:	Speech 2 - Evacuation Tone Speech Message Setting See Section 5.6 Page 42	\checkmark	X	\checkmark
↓ Ld:	Lockdown Message Setting See Section 5.8 Page 43	\checkmark	X	\checkmark
↓ £E:	Test Message Setting See Section 5.11 Page 44	\checkmark	X	V
₩ FR:	False Alarm message Setting See Section 5.12 Page 44	\checkmark	X	V

Mode Accessible In

\downarrow		Controlle	Slave	Standalon
[H:	Chime Message Setting See Section 5.13 Page 45		X	√
↓ RL:	Automatic Alarm Activation Setting See Section 6.4 Page 49	X	X	\checkmark
↓ 5A:	Alert Output to strobe card Setting See Section 5.8 Page 43	\checkmark	\checkmark	\checkmark
↓ 5E:	Evac Output to strobe card Setting See Section 5.9 Page 44	V	\checkmark	\checkmark
↓ 59:	Alarm Synchronisation Setting See Section 6.5 Page 50	X	X	\checkmark
↓ ₽A:	Network Page Microphone Setting See Section 6.6 Page 50	X	X	\checkmark
↓ 69:	Network Background Music Setting See Section 6.7 Page 50	X	\checkmark	\checkmark
↓ Rd:	Annunciator Address Setting See Section 5.14 Page 45	\checkmark	\checkmark	\checkmark
↓ ∩E:	Network Type Setting See Section 6.1 Page 48	\checkmark	\checkmark	\checkmark
↓ [y:	Country Setting See Section 5.4 Page 41	\checkmark	X	\checkmark
↓ d: 89 	Diagnostics Menu See Section 7 Page 51	\checkmark	\checkmark	\checkmark
↓ E	Exit	\checkmark	\checkmark	\checkmark

5.2. Message/Chime List

The following is a list of the messages that can be selected for each option requiring a message:

No.	Message
00	Blank
01	"Warning, the fire alarm system has operated. Stand by for further instructions" 5 seconds - <i>Male Voice</i>
02	"Emergency! Evacuate now!" 3 seconds - Male Voice
03	"Emergency! Evacuate using the nearest fire exit" 4 seconds - Male Voice
04	"Emergency! Evacuate to the nearest assembly point" 4 seconds - Male Voice
05	"Warning, the fire alarm system has operated. Standby for further instructions" 6 seconds - Female Voice
06	"Emergency! Evacuate as directed" 3 seconds - Female Voice
רם	"Attention, attention! An emergency exists. Please follow the lock down procedure" 6 seconds - Male Voice
08	"The emergency warning system is being tested" 3 seconds - Male Voice
09	"This has been a false alarm. You may return to your normal activity" 4 seconds - Male Voice
10	School bell sound 3 seconds
11	Custom Recording 1 from CMM-2 Only available if CMM-2 is installed, will play the default message if CMM-2 is not installed
12	Custom Recording 2 from CMM-2 Only available if CMM-2 is installed, will play the default message if CMM-2 is not installed

Table 5-1 - Message/Chime List

5.3. Tones List

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The following is a list of the tones that can be selected for each option requiring a tone:

No.	Message
00	Blank
01	Ramping T3
02	T3 520Hz
03	T3 800Hz
04	T3 970Hz
05	Ramping T3 – Reverse
06	T3 2860Hz
רם	AS2220 Alert Tone Note: This tone does not support a speech message
08	AS2220 Evacuation Tone Note: This tone will play the speech message twice per cycle
09	510Hz / 610Hz Alternating
10	800Hz / 970Hz Alternating
11	800Hz / 970Hz Ramping @ 2 Hz
12	800Hz / 970Hz Ramping @ 1 Hz
IB	800Hz / 970Hz Ramping @ 0.5Hz
14	420Hz 0.625s on 0.5s off
15	520Hz Continuous Note: This tone does not support a speech message
16	970Hz Continuous – Test Tone Note: Use this tone to get a constant tone out to measure the line output voltage Note: This tone does not support a speech message
רו	970Hz 0.25s on 3.75s off Note: This tone does not support a speech message

Table 5-2 - Tones List

5.4. Configuring the Country Setting

The country setting changes the defaults of the delay time, evacuation tone and the evacuation speech message to settings which are relevant to a specific country. It does not change the operation of the device in any way.

Press the OPTION button to scroll through the menu to [y]:xx.

Press UP or DOWN to scroll to one of the following options:

- EY:RU Sets system to Australian default delay time, evacuation tone and speech message,

 dD:DD- E2:D1 and 52:D2
- ES:n2 Sets system to New Zealand default delay time, evacuation tone and speech message, d0:00,E2:08 and 52:03

Press ENTER to confirm the change.

5.5. Configuring the Alert and Evacuation Tones

The alert and evacuation tones are played when in alert or evacuate mode.



CAUTION: The AS2220 Evacuation Tone is a special tone in that, unlike the other tones, instead of playing the entire speech message once, this message plays twice each cycle. This must be taken into consideration when programming a speech message to be used with this tone.

To set the alert tone, press the OPTION button until the menu shows $\not{}$ 1:xx (Tone 1 – Alert Tone). Press UP or DOWN to scroll to one of the options in Table 5-2 - Tones List. Press ENTER to change the setting.

To set the evacuation tone, press the OPTION button until the menu shows $\exists \exists xx$ (Tone 2 – Evacuation Tone).

Press UP or DOWN to scroll to one of the options in Table 5-2 - Tones List.

Press ENTER to confirm the setting.

NOTE: In the event that the user has set the tone and message to both be blank, the amplifier will play the default tone without any message.

5.6. Alert and Evacuation Speech Messages

The alert and evacuation speech messages are played when the system enters alert or evacuate mode.



CAUTION: The AS2220 is a special tone. Instead of playing the entire speech message once, this message plays twice each cycle. This must be taken into consideration when programming a speech message to be used with this tone.

To set the alert message, press the OPTION button until the menu shows 5 *l*:xx (Speech 1, Alert Tone Speech).

Press UP or DOWN to scroll to one of the options in Table 5-1 - Message/Chime List.

Press ENTER to confirm the setting.

To set the evacuate message, press the OPTION button until the menu shows 52:xx (Speech 2 – Evacuation tone Speech).

Press UP or DOWN to scroll to one of the options in Table 5-1 - Message/Chime List.

Press ENTER to confirm the setting.

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NOTE: In the event that the user has set the tone and message to both be blank, the amplifier will play the default tone without any message.

5.7. Configuring the Delay between Alert and Evacuation

Press the OPTION button to scroll through the menu until it shows dx:xx.

Press UP or DOWN to set the time in increments of 10 seconds up to a maximum of 9 minutes 50 seconds. Some examples of what can be set are shown below:

 $d\square$: \square - Delay time of 0, going to evacuate mode immediately after receiving an alarm from the panel.

- $d\Box$: $I\Box$ Delay time of 10 seconds.
- d 1:00 Delay time of 1 minute.
- d2:30 Delay time of 2 minutes and 30 seconds
- d-:-- Delay time of infinite, always staying in alert mode and never automatically going into evacuate mode.

Press ENTER to confirm the change.



NOTE: If the amplifier is due to change to evacuation mode while the alert message is active, it will delay until the alert message has finished playing before switching modes. As a result the actual delay time may be longer that has been set.

5.8. Configuring the Alert Output to the Strobe Card

To set the Alert output to the strobe card (see Figure 3-18 - Strobe Interface Connection), press the OPTION button until the menu shows 5*R*:xx.

Press UP or DOWN to scroll to one of the following options:

- 5R:RE Output active when broadcasting alert message/tone cycle.
- 5A:Eu Output active when broadcasting evac message/tone cycle.
- 5A:AB Output active when amplifier is active (Alert or Evac or PTT or BGM or

Lockdown or chime or test message or false alarm.)

5A:PE - Output active when PTT is activated.

Press ENTER to change the setting.

5.9. Configuring the Evac Output to the Strobe Card

To set the Evac output to the strobe card (see Figure 3-18 - Strobe Interface Connection), press the OPTION button until the menu shows 5E:xx.

Press UP or DOWN to scroll to one of the following options:

- 5E:RE Output active when broadcasting alert message/tone cycle.
- 5E:Eu Output active when broadcasting evac message/tone cycle
- 5E:AA Output active when amplifier is active (Alert or Evac or PTT .or BGM or Lockdown or chime or test message or false alarm.)
- 5E:PL Output active when PTT is activated.

Press ENTER to change the setting.

5.10. Configuring the Lockdown Message

To set the lockdown message, press the OPTION button until the menu shows Ld:xx.

Press UP or DOWN to scroll to one of the following options:

Ld: XX - XX is one of the options in Table 5-1 - Message/Chime List.

Ld: RE - Option to play the alert tone/message cycle.

Ld: E_{μ} - Option to play the evac tone/message cycle.

Press ENTER to confirm the setting.

5.11. Configuring the Test Message

To set the test message, press the OPTION button until the menu shows EE:xx.

Press UP or DOWN to scroll to one of the options in Table 5-1 - Message/Chime List.

Press ENTER to confirm the setting.

5.12. Configuring the False Alarm Message

To set the false alarm message, press the OPTION button until the menu shows FR:xx.

Press UP or DOWN to scroll to one of the options in Table 5-1 - Message/Chime List.

Press ENTER to confirm the setting.

5.13. Configuring the Chime Tone

To set the chime tone, press the OPTION button until the menu shows [H:xx.

Press UP or DOWN to scroll to one of the following options:

EH: XX - XX is one of the options in Table 5-1 - Message/Chime List.

EH: *RE* - Option to play the alert tone/message cycle.

 $EH: E_{u}$ - Option to play the evac tone/message cycle.

Press ENTER to confirm the setting.

5.14. Configuring the Annunciator Address

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NOTE: EIA-485 communication is not yet supported by this device and hence neither is the annunciator addressing. This may change in a future release of firmware.

5.15. Exiting the Menu

To exit the menu, press the OPTION button until menu shows E.

Press the ENTER to the exit the menu.

5.16. Recording a Custom Message using the CMM-2

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NOTE: If the Amplifier is setup on a network, power down the system and remove the network cable before the card is programmed.



NOTE: The maximum length of a recorded message is 20 seconds.

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NOTE: Both messages must contain a recording; else an F-14 fault will be displayed on the system.

a. Local PA

1. Set dipswitch-1 (see Figure 5-1) to 'ON' thus enabling RECORD and PLAY.

This will put the system into record mode and set the amplifier to 'OFF' on the DA Controller. The seven segment display will show EE and also generate a fault on the system.



Figure 5-1 - Custom Message Module Connections

- 2. Select the message number you want to record using dipswitch-2 on the CMM-2:
 - 'OFF' for message 1.
 - 'ON' for message 2.

At this point the existing programmed message can be played by pressing PLAY.

3. Press RECORD, a countdown will be displayed on the seven segment display. The Red LED on the expansion card will flash during the countdown.

Press and hold the Push to Talk (PTT) on the PA microphone before the counter gets to zero.

Recording will start when the counter gets to zero. The red LED will continue flashing during the recording.

4. Record the message by speaking in to the microphone. To stop recording, press the RECORD button a second time. The red LED will stop flashing.

Release the PTT button. A check will now initiate.

- 5. At the completion of the check, the seven segment display will indicate *E*^{*b*} followed by the message number. The message is now saved and can be played back by pressing the PLAY button.
- 6. Repeat the same process to record the other message if required.
- 7. Set dipswitch-1 to 'OFF' to return the amplifier to normal mode.
- b. From PC
- 1. Disconnect the PA microphone (if fitted).
- 2. Set dipswitch-1 to 'ON' position enabling the RECORD and PLAY buttons.

This will put the system into record mode and set the amplifier to 'OFF' on the front display card. The segment display will show E_{\pm} and also generate a fault on the system.

- 3. Select the message number you want to record using dipswitch-2 on the CMM-2:
 - 'OFF' for message 1.
 - 'ON' for message 2.

At this point the existing programmed message can be played by pressing PLAY

- 4. Connect the speaker from the PC to the amplifier MIC input connector using the supplied cable (CA-02-001) as shown in Figure 5-1. Connect the left and right channels together (Red and Green lines). Link the PTT and 0V line as shown in Figure 5-1.
- 5. Press the RECORD button, a countdown will be displayed on the seven segment display. Recording will start when the counter gets to zero. The Red LED on the expansion card will flash during the countdown.
- 6. Play the message from the external audio equipment. To stop recording, press the RECORD button a second time. A check will now initiate.
- 7. When the check is completion, the seven segment display will indicate *EE* followed by the message number. The message is saved and can be played back by pressing PLAY.
- 8. Repeat the same process to record the other message if required.
- 9. Set dipswitch-1 to the OFF to return the amplifier to normal mode.

CAUTION: Ensure that the PA microphone is reconnected to the preamplifier when finished.

Section 6 Network Programming

6.1. Network Overview

Up to 8 DA series amplifiers can be networked together to provide the following additional features:

- Expand the number of zones they can drive without needing to wire and program another amplifier.
- Control multiple amplifiers from the one device.
- Share a single paging microphone across multiple amplifiers.
- Share a background music signal across multiple amplifiers.
- Synchronise tones between devices.



NOTE: Only 8 devices are supported on the one network.

6.2. Network Devices

There are three different types of network devices which can be programmed on the Digital Amplifier:

a. Controller (Master)

This is the master controller for the network. This device controls tone synchronisation and distributes paging, and background music audio signals. Every group of networked devices must have a Controller device on it.

The master controller must be configured to be the first device on the network. All external message switches (Chime/Lockdown/Test/False Alarm) must be connected to this device. It must also have its CIE input connected to the fire panel that the alarm will be received from. The Controller must have a DA controller board.

The slave device will play whatever the controller amplifier is playing, with the exception of background music. The slave may either play the same background music as the controller or it may have its own background music. All alarm tones and messages as well as ancillary messages and paging audio will be played exactly as the controller will play it.

The slave should not have a front display card or microphone connected as it is controlled by the controller. The slave will also not respond to any of the ancillary message input activations.

A slave device would be used when the installer wants to expand the speaker audio to another zone but does not have sufficient power from one amplifier to drive all the speakers in the building.



CAUTION: The output of network devices cannot be connected in parallel to increase the power that can be delivered. For example a DA-30s speaker output (30W) cann<u>ot</u> be connected in parallel with another DA-30s speaker output (30W) to drive 60W of load. A separate line with 30W of speaker load must be brought into the panel and connected to one DA-30 and another separate line with the remaining 30W of load must be connected to the other DA-30.

b. Slave

c. Standalone

This device can be programmed to take paging audio and background music audio in addition to synchronisation pulses from the network. It must have its own inputs for ancillary messages. It must have a CIE signal from the panel to activate its alarm state.

A Standalone device would be used when the alarm activation between zones in a building are independent of each other, but requires tone synchronisation.

6.3. Configuring the Network Type

The network type setting programs the device as a controller, slave or standalone; see section 6.2 for an overview of each device type.

Press the OPTION button to scroll through the menu until you get to ¬E:xx.

Press UP or DOWN to scroll to one of the following options:

nE:EE - Sets the network type to controller.

nE:5L - Sets the network type to slave.

 \neg E: \neg ^[] - Sets the network type to none/standalone (default setting).

Press ENTER to change the setting.

6.4. Configuring the Automatic Alarm Activation Setting

The alarm activation setting establishes how the DA is to receive its automatic panel CIE alarm activation. The DA will be programmed to receive the automatic panel CIE alarm activation from its own onboard input, or both its onboard CIE input and the onboard CIE input of the network controller.

This setting does not handle how manual alarms are activated (i.e. when the DA-controller on the network controller is set to *'alert'* or *'evacuation'*). No matter what state the network controllers DA control board is in, it will still broadcast the CIE alarm activation down to the network standalone devices.

This option is only available on standalone devices on the network.

Press the OPTION button to scroll through the menu until you get to AL:xx.

Press UP or DOWN to scroll to one of the following options:

RL: *L* - Sets the automatic alarm activation to local CIE input only (default setting).

RL: R - Sets the automatic alarm activation to local CIE input or network controller CIE input.

Press ENTER to change the setting.



CAUTION: The CIE alarm can only be activated by either the standalone device being programmed or the network controller. One standalone device cannot receive CIE alarms from slaves or other standalone devices.

6.5. Configuring the Synchronisation of Tones

The synchronisation setting programs the device to synchronise its tones with the controller system or to play the tone immediately not waiting for synchronisation. It is recommended that when synchronising the tones and messages of the controller and the standalone, the selected messages and tones be the same.

The synchronisation setting can only be set on standalone devices. A standalone device will not synchronise without a master. The device must be connected to a network when its synchronisation setting is set to on. If not, it will indicate that it is not receiving a synchronisation pulse (Fault).

Press the OPTION button to scroll through the menu until you get to 55:xx.

Press UP or DOWN to scroll to one of the following options:

59:0⁻⁻ Sets the synchronisation to on (Default setting).

59:0F - Sets the synchronisation to off.

Press ENTER to confirm the setting.

6.6. Configuring the Page All / Microphone Setting

The Page All setting enables the device to receive paging information from the network.

The Page setting can only be set on standalone devices.

Press the OPTION button to scroll through the menu until you get to PA:xx.

Press UP or DOWN to scroll to one of the following options:

PR: R - Sets the device to receive pages from All (both the local microphone and the network page)

PR: L - Sets the device to receive pages from the local microphone only, not the network (Default setting).

Press ENTER to confirm the setting.

6.7. Configuring the Background Music (BGM) Setting

The Background music program setting enables the device to receive audio information from the network.

The BGM setting can only be set on slave and standalone devices.

Press the OPTION button to scroll through the menu until you get to b9:xx.

Press UP or DOWN to scroll to one of the following options:

b9: C - Sets the device to receive background music from the controller.

b9= L - Sets the device to receive background music from the local input (Default setting).

Press ENTER to confirm the setting.

Section 7 Diagnostics

7.1. Fault List

When a fault condition is detected by the BOWS, the fault relay drops out and the contacts close (See Figure 7-1). The fault code is shown on the seven segment display.





Fault Free Condition

Fault Condition

Figure 7-1 Fault Relay Conditions

The fault codes and their description are shown below:

F: [] | Manual Off

This is displayed when the DA Controller has been manually switched off, stopping the unit from playing any audio down the line, even when in alarm.

F: [] CPU Firmware CRC Failure

This fault occurs when the firmware code has become corrupt. Contact technical support for assistance.

F : []] Internal Message CRC Failure

This fault occurs when the internal messages in the unit have become corrupt. Contact technical support for assistance.

F : []4 Option Settings CRC Failure

This fault occurs when the programming options have become corrupt. Contact technical support for assistance

F: [] 5 Speaker Line Open Circuit

This is displayed when the speaker is open circuit, usually caused by a loose connection or faulty field wiring. Ensure your End Of Line (EOL) resistor is $47k\Omega$.

If a DA is connected to and SDM-4, an F-05 can represent a fault on the SDM-4, even if the SDM-4 is in short circuit fault.

F:05 Speaker Line Short Circuit

This is displayed when there is a short circuit across the speaker line terminals. This is usually caused by a wiring fault, but can also be caused by water getting into the line or a crossover capacitor on the speaker transformer being faulty or not installed. Ensure your End Of Line (EOL) resistor is $47k\Omega$, not $4.7k\Omega$.



NOTE: With the network option set to New Zealand, this fault will be ignored and not added to the fault register when the amplifier is in Alert, Evac, or PTT.

F: []] Over Current Shutdown

This fault should not be presented on a DA-30 (*from board revisions NI-2019-01-1B and beyond*), DA-60 or DA-120, if this is displayed on any of these devices, contact technical support.

DA-30 (board revisions NI-2019-01-0A through to NI-2019-01-0E) This occurs when too much current is being drawn from the amplifier. In this event the amplifier will continually shut off and try to restart itself. This would occur when there is too much load on the speaker line or there is a dead short. To check if the device has experienced an over current fault see section 7.7.

F:08 Amplifier Thermal Fault

This fault should not be presented on a DA-30 (*from board revisions NI-2019-01-1B and beyond*) or DA-60, if this is displayed, contact technical support.

DA-30 - (board revisions NI-2019-01-0A through to NI- 2019-01-0E) The amplifier has shutdown to protect itself from overheating. Once the amplifier cools down it will restart. To check the number of times that the amplifier has experienced this fault, see section 7.6.

DA-120 – The heat sink cooling fan has failed; check that it is connected and that nothing is obstructing the fan from operating.

F: []] Amplifier Thermal Warning

This fault is displayed to warn the user that the amplifier is being exposed to too high a temperature and will soon shutdown.

F : [] Loading Exceeded

The amplifier cannot safely provide enough power to maintain the audio on the speaker line due to there being too much load. Either remove speakers off the line or tap them to a lower wattage.



NOTE: This fault will latch on until the unit has been powered down and powered back up, even if the line loading has been restored.

F: || Network Communications Failure

This fault will be displayed when the system expects to get a synchronisation pulse or communications information from the controller but does not. This is usually caused by a wiring fault or the device not being on a network with a controller device.

F : { Synchronisation Return Missing

This fault will occur on a device programmed as a controller when it does not receive a return synchronisation pulse. It means one of the following; 1) There is a fault on another device on the network, 2) There is a ribbon cable problem or 3) The end of line link not added to the final device on the network.

F : 13 Fault on the Strobe Card

The strobe card connected to the system has a fault on it. See the manual for the strobe card.

F : |4 External Message Flash Fault

The memory on the CMM-2 external custom message module is corrupt. Contact technical support for assistance.



NOTE: Both messages need to be programmed to avoid getting an F-14 on the system. Recording a blank message on an unused space is acceptable.

F: 15 Supply Voltage Low

This fault occurs when the supply voltage is low, below 24.0V, indicating that the device is running on batteries. This will stop the amplifier from playing any background music to try to conserve power.

7.2. Diagnostics Menu Overview

The diagnostics menu is used to help the service technician fault find when they are using the amplifier. To get to the diagnostics menu, press the OPTION button until you get to the diagnostics menu indicated by d_1 /P. Press UP or DOWN to scroll do the desired function



7.3. Accessing Firmware Revisions

To access the firmware revision information press the OPTION button until you get to the diagnostics menu indicated by d 189.

Press UP to scroll to \neg y:xx. 'y' indicates the major revision while 'xx' indicates the minor revision.

Press UP again to get bxxx. 'xxx' indicates the software build number.

7.4. Accessing Message Memory Revision

To access the Message memory revision information press the OPTION button until you get to the diagnostics menu indicated by d_{1} /R9.

Press UP to scroll to 5y.xx. 'y' indicates the major revision while 'xx' indicates the minor revision.

7.5. Checking Inputs

It is recommended that the amplifier be in the off state (Switching the DA-Controller to off) when checking the inputs into the board.

To access the input check function, press the OPTION button until you get to the diagnostics menu indicated by d_1 A9.

Press UP to scroll to / P:AB. 'A' and 'B' are used to determine which inputs are active.

Digit 'A'							Digit 'B'		
Display	120W BOWS	60W BOWS	BGM Enabled	Strobe Fault	Display	CIE Input	Lockdown	Chime	Push to Talk
0	OFF	OFF	OFF	OFF	۵	OFF	OFF	OFF	OFF
1	OFF	OFF	OFF	ON	1	OFF	OFF	OFF	ON
2	OFF	OFF	ON	OFF	2	OFF	OFF	ON	OFF
Э	OFF	OFF	ON	ON	Э	OFF	OFF	ON	ON
Ч	OFF	ON	OFF	OFF	Ч	OFF	ON	OFF	OFF
5	OFF	ON	OFF	ON	5	OFF	ON	OFF	ON
Б	OFF	ON	ON	OFF	Б	OFF	ON	ON	OFF
٦	OFF	ON	ON	ON	٦	OFF	ON	ON	ON
8	ON	OFF	OFF	OFF	8	ON	OFF	OFF	OFF
9	ON	OFF	OFF	ON	9	ON	OFF	OFF	ON
R	ON	OFF	ON	OFF	Я	ON	OFF	ON	OFF
Ь	ON	OFF	ON	ON	Ь	ON	OFF	ON	ON
Ε	ON	ON	OFF	OFF	Ε	ON	ON	OFF	OFF
d	ON	ON	OFF	ON	d	ON	ON	OFF	ON
Ε	ON	ON	ON	OFF	Ε	ON	ON	ON	OFF
F	ON	ON	ON	ON	F	ON	ON	ON	ON

7.6. Checking/Resetting Over Temperature Faults

To access the number of over temperature faults the board has been exposed to, press the OPTION button until you get to the diagnostics menu indicated by $d_{1}R9$.

Press UP to scroll to *RF*.xx. 'xx' indicates the number of over temperature faults experienced since the last power up, capped at 99.

To reset the count the amplifier must be powered down and powered back up.

7.7. Checking/Resetting Over Current Faults

To access the number of over currents faults the board has been exposed to, press the OPTION button until you get to the diagnostics menu indicated by d_1 , R9.

Press UP to scroll to AE. x. x will indicate if the device has been exposed to an over current fault since start-up. AE. \Im represents yes, an over current has occurred. AE. \neg represents no, an over current has not occurred.

7.8. Priority Matrix

The DA series amplifiers are designed to meet the following priority matrix.

		LOWER					HIGHER				
		BGM	CHIME ^{1,2}	FALSE ALARM	TEST MESSAGE	LOCKDOWN ^{1,2}	ALARM (CIE)	ALERT (Front panel) ¹	EVAC (Front panel) ²	PTT	OFF (Front panel)
Ŷ	BGM		\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark
Ν	CHIME ^{1,2}	***		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
<u>o</u>	FALSE ALARM		383		\checkmark	\checkmark		\checkmark	\checkmark		
	TEST MESSAGE	888		888		\checkmark		\checkmark	\checkmark		
	LOCKDOWN ^{1,2}		383				\checkmark	\checkmark	\checkmark		
ER	ALARM (CIE)	8888	3 883								
	ALERT (Front panel) ¹								\checkmark		\checkmark
	EVAC (Front panel) ²										\checkmark
GН	PTT	888	3883	8883	8883		888	888	***		
王	OFF (Front panel)									E Carlor and Carlor an	

PRIORITY

Ticks in the box indicate that the high priority item does in fact have a higher priority than the lower priority item.

1: If CHIME or LOCKDOWN is selected with the ALERT option, the activation of these inputs would have the same priority as the front panel ALERT switch.

2: If CHIME or LOCKDOWN is selected with EVAC option, the activation of these inputs has the same priority as the front panel EVAC switch.

PRIORITY

Appendix A – Factory Defaults

Below is a list of the factory default settings in the unit:

Option	Description	Default Value
d- :	Delay time from Alert to Evacuate See Section 5.7 Page 43	d0:00 - Australia ¹ d0:00 - New Zealand ¹
E 1:	Alert tone Setting See Section 5.5 Page 42	רם:ו א
£2:	Evacuation tone Setting See Section 5.5 Page 42	$E2:01 - Australia^{1}$ $E2:00 - New Zealand^{1}$
5 1:	Alert tone Speech Message Setting See Section 5.6 Page 42	5 I:D I
52:	Evacuation tone Speech Message Setting See Section 5.6 Page 42	52:02 - Australia ¹ 52:03 - New Zealand ¹
Ld:	Lockdown Message Setting See Section 5.8 Page 43	Ld:07
£E:	Test Message Setting See Section 5.11 Page 44	£E:08
FA:	False Alarm message Setting <i>See Section 5.12 Page 44</i>	FA:09
Ен:	Chime Message Setting See Section 5.13 Page 45	CH: 10
AL :	Automatic Alarm Activation Setting See Section 6.4 Page 49	A L: L ²
5A:	Alert Output to Strobe Card Setting See Section 5.8 Page 43	SA:AF
5E:	Evac Output to Strobe Card Setting See Section 5.9 Page 44	5E:Eu
59:	Alarm Synchronisation Setting See Section 6.5 Page 50	59:0F²
PA:	Network Page Microphone Setting See Section 6.6 Page 50	PA : L ²
69:	Network Background Music Setting See Section 6.7 Page 50	69: L ²
Ad:	Annunciator Address Setting See Section 5.14 Page 45	A9:00
nt:	Network Type Setting See Section 6.1 Page 48	nt :n0
CY:	Country Setting See Section 5.4 Page 41	C9:80

¹ Default values are loaded when the country setting is changed. ² Default values are loaded when the network type is changed.

DA Series BOWS

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by Honeywell			
	New South Wales (Head Office) 9 Columbia Way Baulkham Hills NSW 2153	New Zealand 264 Mt Eden Road Mt Eden 1024	
	ph +61 (0)2 9899-4155 fax +61 (0)2 9899-4156	ph +64 (0)9 623 5050 fax +64 (0)9 623 5060	