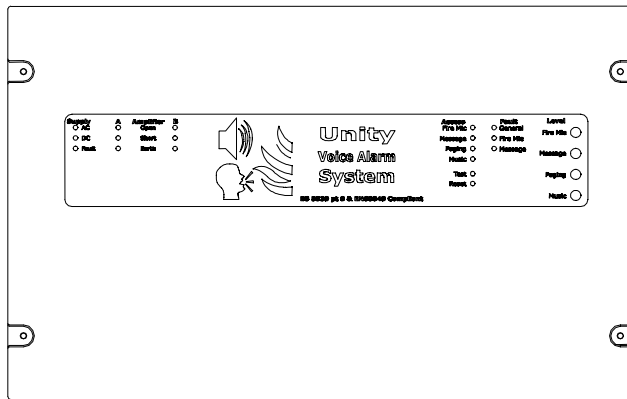


Unity DAU Voice Alarm System



User Manual & Log Book

Site Name

Address

Contractor

Commissioned



Introduction

Voice Alarm (VA) systems are the quickest way to evacuate the public & staff from a building.

Following fire detection, automated messages control the flow of people in stairwells and corridors allowing an orderly evacuation without panic. These messages are supplemented by spoken messages from the fire service or management suite confirming the validity and need to leave the building.

This positive confirmation speeds evacuation and avoids the "false alarm" mentality reducing the risk of death from fire.

Suitability

Voice Alarm systems are recommended for all public buildings and multi story buildings over four floors by BS5588.

In public buildings it's not possible to fire drill the public, as they visit the premises infrequently, so systems such as Voice alarms save valuable time in evacuating the building.

The use of phased messages in multi-story buildings prevents over-crowding in stairwells and at exits, preventing secondary injuries. In phased evacuation, the floor in fire receives the evacuate message, and the floor above & below receive an alert message, preparing them for evacuation.

In more complex scenarios the use of multiple alert and evacuate messages can be beneficial, messages telling the evacuees they are going the right way, and messages asking people to make way for people leaving evacuated areas. These additional messages can dramatically speed up the evacuation especially in malls and large airport environments.

Product Overview

Unity has been developed to replace talking sounders in many voice alarm applications, and is available in several forms. The DAU is a complete VA system in a single wall mount box which is complete with messages, fire interface, dual 30W monitored amplifiers, power supply, monitored battery charger and the ability to connect non monitored paging and music directly.

The DAU has been developed to draw the minimum of current in standby conditions and mutes the music when the AC supply fails, the unit then draws 60mA quiescent current allowing the use of 3.2AH commodity SLA batteries for full compliance with BS5839 part 8.

Connection to fire alarm systems could not be simpler; Unity DAU has independent Alert and Evacuate inputs, which can be connected to reverse monitored sounder circuits directly. Once activated the fire signals need to be de-latched by the reset input, for retrofit to systems with relays a protected 24V aux supply is available.

The speaker lines are monitored using a low current DC system, which is continuous, and works with the music playing. Faults reported are open, short and earth faults. Each speaker fitted to Unity DAU must have a DC blocking capacitor fitted. The use of DC monitoring allows all cable types (MICC and soft skin) to be used with the system.

Music sources can be plugged directly into the DAU, and the level of this can be set using a remote DC volume control. When used with a paging microphone, the music ducks and restores gently after paging.

Priorities

The Unity DAU has six fixed priorities for the inputs as follows:-

1. Fire Microphone, this is the highest priority input on the system, designed to be used by the controlling officer.
2. Message Generator, this has three messages, all messages latch until reset from either the front panel recessed button, or from the cancel button on the fire microphone or by the RESET input from the Fire alarm input. Messages are prioritised in the following order:
 - a. EVAC- Triggered from the fire alarm interface or from the fireman's microphone, top priority message.
 - b. ALERT- Triggered from the fire alarm interface or from the fireman's microphone, second priority message.
 - c. TEST- Triggered from the front panel or from the fireman's microphone, this is the lowest priority message.
3. Page Input, this is the fifth priority input, designed for non-emergency functions such as reception paging.
4. Music Input, this is the lowest priority input and automatically selected when no other input is exerting a priority, if not used turn the level control on the front panel fully anticlockwise.

Operation

The Unity DAU is fully automatic in operation; the only user controls available once the unit has been commissioned are the front panel Reset and Test buttons. Pressing the test button will broadcast the test message to the speaker circuits and latch until the Reset button is pressed.

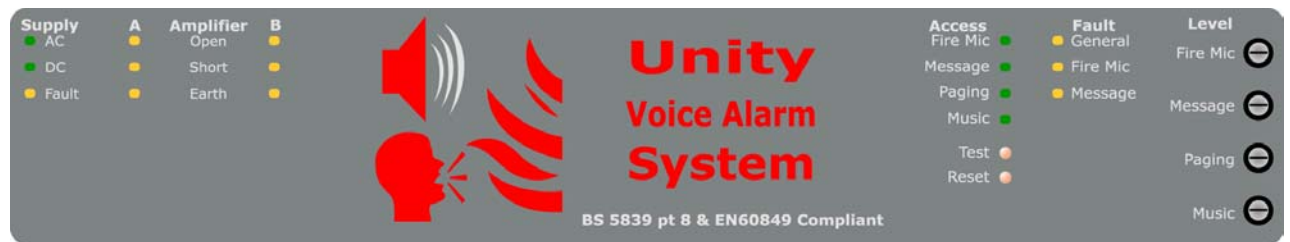
The Unity DAU has fully compliant fault monitoring when correctly installed and commissioned, if any status indicators are illuminated YELLOW (except the Message ACCESS Led) call service to investigate the cause of the fault, this should be indicating a Sounder or Voice alarm fault on the Fire Alarm Panel.

Maintenance.

It is a requirement of BS5839pt8 that a maintenance agreement be in place for Voice Alarm systems, the maintenance schedule should be as follows.

- | | |
|------------|--|
| Weekly: | Broadcast the test message to all zones, and check speaker operation, microphones should be checked for operation if fitted, record results in the site log. |
| Monthly: | Trigger the fire alarm system when the building is empty and check the Evacuate message broadcasts, record results in the site log. |
| Quarterly: | Engineer Call to check system operation. |
| Yearly: | Engineer Call to check system operation and check Battery Health. |
| 5 Yearly: | Engineer Call to check system operation and replace the batteries. |

Indications and Controls



Supply Section Indicators

AC	Indicates healthy AC mains available.
DC	Indicates the battery supply is available.
Fault	Either the AC supply or DC supply is unavailable, or a fuse has ruptured.

Amplifier Section Indicators (both channels are identical and independent)

Open	The DAU cannot see both end of line resistors for this amplifier channel.
Short	The DAU has detected a short on this amplifier channel.
Earth	The DAU has detected an earth fault on this amplifier channel.

Access Section.

Fire Mic	Lights green when the fireman's microphone is activated.
Message	Lights when a stored message is playing, Green for test, Yellow for the Alert Message and RED for the Evacuate message.
Paging	Lights green when the paging microphone is in use.
Music	Lights green when the music channel is open, (no other inputs in use).
Test	This is a recessed push button, pressing this starts the test message broadcasting to the speakers.
Reset	This recessed push button cancels any message playing (this will not cancel messages triggered from the fire alarm if the trigger is still active) the message always plays to the end of the current cycle once Reset.

Fault Section.

General	This lights when the DAU detects any fault in its operation.
Fire Mic	Lights if there is any fault with the fireman's microphone or cables to the microphone.
Message	Lights if the message store in the DAU has detected a corruption.

Level Controls

Fire Mic	Sets the Level of the fireman's Microphone, capped after commissioning.
Message	Sets the level of the stored messages in the Unity DAU, capped after commissioning
Page	Sets the level of the paging microphone input to the DAU
Music	Sets the level of the music to the Speakers.

Important Safety Information

This Equipment must only be installed and maintained by suitably skilled and competent person.

This Equipment is defined as Class 1 in EN60065 (Low Voltage Directive) and must be EARTHED.



- | | |
|----------------|---|
| CAUTION | INDOOR USE ONLY |
| WARNING | SHOCK HAZARD-
ISOLATE BEFORE OPENING |
| WARNING | TO REDUCE THE RISK OF FIRE OR
ELECTRIC SHOCK, DO NOT EXPOSE THIS
UNIT TO RAIN OR MOISTURE |
| WARNING | THIS UNIT MUST BE EARTHED |
| WARNING | NO USER SERVICABLE PARTS |

Each exchange unit requires a 3A spur, returning to a breaker clearly marked **Voice Alarm DO NOT TURN OFF**. If the units are distributed around a site it is essential all units are on the same mains phase, as they are classified TEN 230V, powering from different phases can mean a 440V potential can be present in a unit during a major fault incident.



Anti-static handling guidelines

Make sure that electro-static handling precautions are taken immediately before handling PCBs and other static sensitive components

Before handling any static-sensitive items, operators should get rid of any electrostatic charge by touching a sound safety earth, such as a radiator. Always handle PCBs by their sides and avoid touching any components. PCBs should be stored in a clean, dry place that is free from vibration, dust and excessive heat.

Storing the PCBs in a suitable cardboard box will also guard them against mechanical damage.

Batteries

The Unity DAU requires 2 number 12V 3.2AH sealed lead acid batteries to provide backup power in the event of mains failure as defined in BS5839pt8 for 24 hours standby and 30 minutes operation.

For 72hour standby and 1 hour operation 2 number 12V 17AH batteries are required, these will need to be fitted in an external battery enclosure, the monitored charger in the Unity DAU is capable of charging and monitoring these batteries.



Safety Information:

Sealed Lead acid batteries contain sulphuric acid which can cause burns if exposed to the skin, the low internal resistance of these batteries means large currents will flow if they are accidentally short circuited, causing burns and a risk of fire- exercise caution when handling batteries.

Power Up Procedure:

Always apply mains power before connecting batteries, do not commission Unity DAU on batteries, as the high inrush current required by the power supply may rupture the battery fuse.
Always connect the Positive (Red +) terminal first.

Power Down Procedure

Disconnect the batteries before removing the mains power; always remove the negative (Black – terminal) first.



Caution Speaker circuits carry 100V AC

Disconnect before servicing to prevent Shock hazards

Speaker Circuits on Unity are DC monitored.

Suitable speakers for Unity MUST have a thermal fuse to disconnect the speaker if it is in the area in fire and a DC blocking capacitor fitted, typically the capacitor is 2.2uF 250V DC.

NOTE! If music is to be broadcast on the Unity DAU an appropriate PRS Licence should be obtained within the UK.

The Unity DAU is designed and manufactured in the UK by

Current Thinking Ltd,

Unit 91 Silver Briar

Enterprise Park East,

Sunderland,

SR5 2TQ.

www.current-thinking.com

info@current-thinking.com

Certificate of Commissioning for a Unity DAU Voice Alarm System to BS5839 pt 8 (1988) and BSEN60849 (1988).

Site Name

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Areas Covered

In accordance with **28.6** of BS 5839 : Part 8 : 1998, the installation has been inspected and been found to be in accordance with the recommendations of this code except for the following:

- In accordance with **28.6** of BS 5839 : Part 8 : 1998:
- a) subclause **28.3**, the insulation of cables and wires has been tested,
 - b) subclause **28.4**, the earthing has been tested, and
 - c) subclause **28.5**, the entire system has been tested for satisfactory operation.

The system is accepted in good working order and, in accordance with BS5839: Part 8, 1988, record drawings, operating instructions and a system log book have been supplied and received. Attention has been drawn to the recommendations concerning user's responsibilities, particularly those concerned with routine attention and test procedures.

Engineer

Date

Position

Signature:

Site Specific Information:

**Fire
Microphone
Location** _____

**Fire Alarm
Panel Location** _____

**Paging
Microphone
Location** _____

**Music Source
Location** _____

**Remote
Volume
Location** _____

Speaker Circuits

Cable ID	Circuit	Area Served	Power (W)	Earth (Ω)	End of line Location
	1A				
	2A				
	1B				
	2B				

