Prem1er EVACS16

VOICE ALARM CONTROL PANEL

4 – 16 ZONES

Installation Manual

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Summary

The Premier Evacs 16 is a 16 zone (or channel) voice alarm system which has 15 Watts per Zone Output.

It has 2 pre-recorded messages, which can be altered with the Voice alarm software, and USB connection.

The pre-recorded messages can be initiated either via the unit`s keypad, or via one of the 18 remote input triggers. The triggers may be provided by the outputs of a fire alarm control panel / control & indicating equipment (CIE).

It has an emergency (or fireman's) microphone which can be used to broadcast live messages

The system itself uses 4 quad amplifiers to provide the 16 zones. This configuration allows mixed messaged to be played on different zones.

The Evacs 16 is available in 4 versions:

Model No	EVAC16/4	EVAC16/8	EVAC16/12	EVAC16/16
Part No	180-100	180-101	180-102	180-103
No of Zones	4	8	12	16
Output / Zone	15 Watts	15 Watts	15 Watts	15 Watts
Total Power	60 Watts	120 Watts	180 Watts	240 Watts
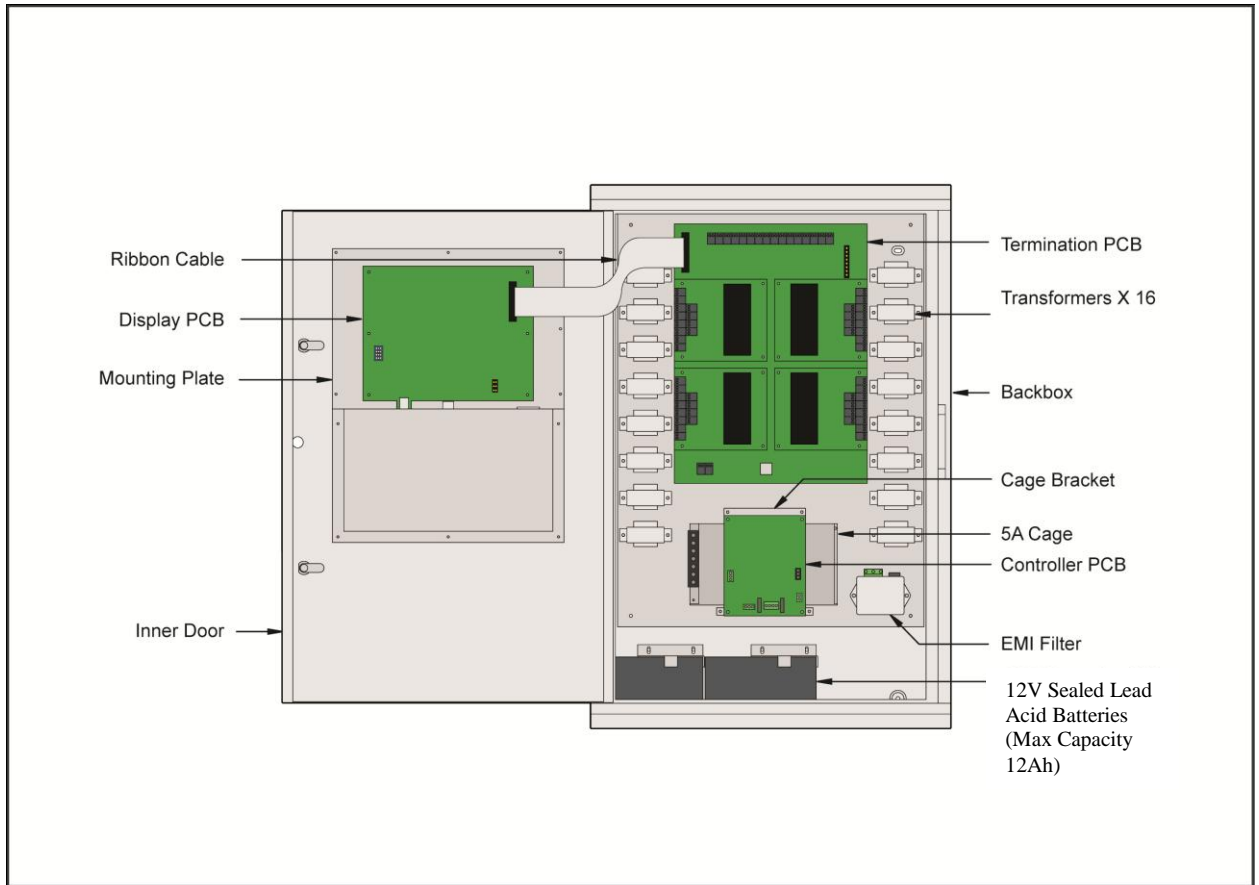
Safety information & use of this manual

WARNING: *Read this section completely before operating this equipment.*

Installation information

THIS VOICE ALARM CONTROL & INDICATING EQUIPMENT (VACIE) IS CLASS 1 EQUIPMENT AND MUST BE EARTHED.

This equipment must be installed and maintained by a qualified and technically experienced person.
This VACIE. must be wired to a fused spur rated at 3A. It must **NOT** be connected via a removable plug, or be connected through an RCD device.

Prior to commencing installation of the control panel, ensure that adequate precautions are taken to prevent damage to the sensitive electronic components on the display board and the control board due to electrostatic discharge. You should discharge any static electricity you may have accumulated by touching a convenient earthed object such as an unpainted copper radiator pipe. You should repeat the process at regular intervals during the installation process, especially if you are required to walk over carpets.

The panel must be located in a clean, dry position, which is not subject to excessive shock or vibration and at least 2 metres away from pager systems or any other radio transmitting equipment.

The only items which are designed to be removed from the enclosure, are the cable connectors. Ensure that all electrical power is removed from the equipment before removing, inserting or connecting cables to these connectors.

Battery information

This VACIE. uses 2 x 12V Sealed Lead Acid (SLA) batteries with a maximum capacity of 12Ah.

CAUTION:

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO BATTERY MANUFACTURERS INSTRUCTIONS.

IMPORTANT NOTES ON BATTERIES:

DANGER: Batteries are electrically live at all times. **NEVER short circuit the battery terminals**.

WARNING: Batteries are often heavy. Take great care when lifting and transporting batteries.
DANGER: Do NOT attempt to remove the battery lid or tamper with the internal workings of the battery. Electrolyte is a highly corrosive substance, and presents

significant danger to yourself and to anything else it touches. In case of accidental skin or eye contact, flush the affected area with plenty of clean, fresh water and seek immediate medical attention. Valve Regulated Lead Acid (VRLA) batteries are "low maintenance", requiring no electrolyte top-up or measurement of specific gravity.

Product disposal at the end of its working life

Like all electronic equipment, at the end of its working life this unit should not be disposed of in a refuse bin. It should be taken to a local reprocessing site as per the guidelines of the WEEE directive, for correct disposal.

Locating the Voice Alarm panel

The control panel should be installed in accordance with the following recommendations:-
The panel should be close to the main entrance of the building, so that it can be viewed by any fire-fighting personnel entering the building.
It should be fitted to a sturdy wall that will not flex unnecessarily.
It should be mounted at eye level, in order for it to be viewed without need of a ladder.
It should be installed in a dry, weatherproof place, preferably NOT in direct sunlight.
It should be easily accessible, so that the responsible person can perform their regular fire alarm checks.

Fixing the back box to the wall
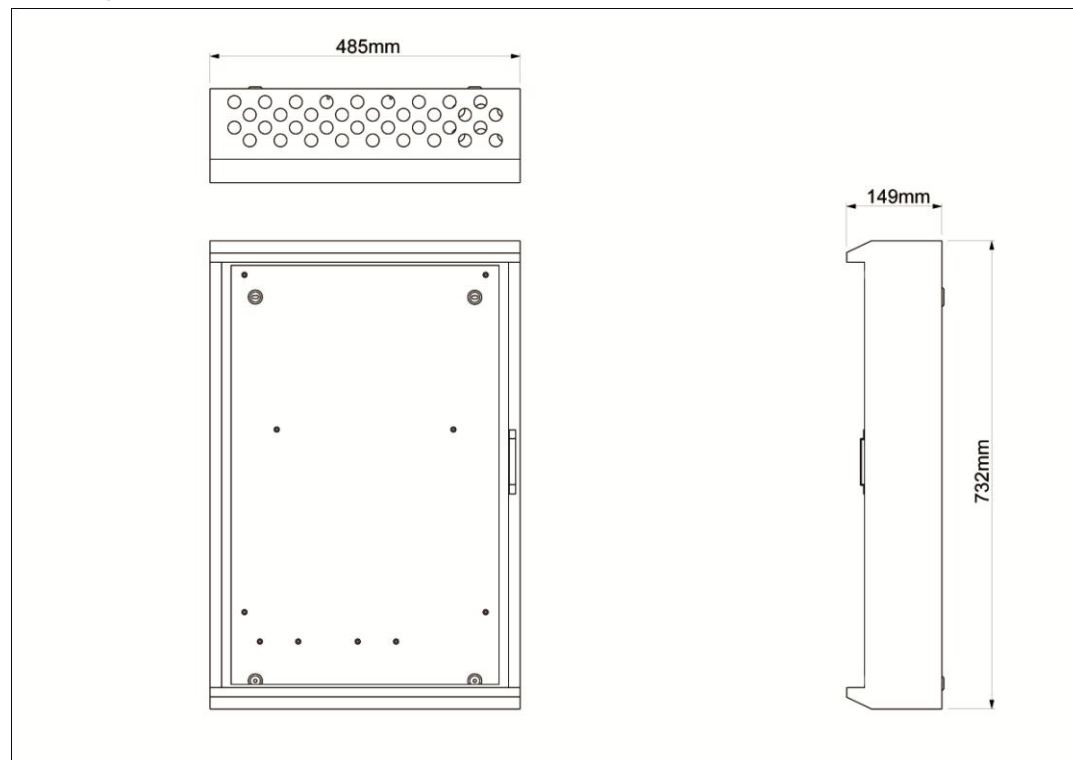
Plan view inside the enclosure without PCBs. Side view for surface installation.
(Dimensions: mm)

Fix the enclosure to the wall using the four mounting holes provided.
Check the build & condition of the wall to decide a suitable screw fixing.

The mounting holes are designed for No 8 roundhead or countersunk woodscrews (or similar).

Remove any debris from the enclosure.

Recommended cable types and their limitations

All wiring must be installed to meet BS5839: Pt1: 2002 + A2:2008 and BS 7671:2008 (IEE Wiring Regulations) standards. Other National standards of fire alarm system installation should be adhered to where applicable.

Screened cables should be used throughout the installation to help shield the Panel from outside interference and ensure EMC compatibility.

The two categories of cable according to BS5839: Pt1: 2002 + A2:2008, Clause 26 "Fire Detection and Alarm Systems for Buildings (Code of Practice for System Design, Installation and Servicing)" are:

Standard fire resisting cable – to PH30 classification of EN 50200 (including the 30 min survival time of Annex E)
Enhanced fire resisting cable – to PH120 classification of EN 50200 (including the 120 min survival time of BS 8434-2)
(Note that all cables should be at least 1mm^2 cross section

On the Premier Evacs16 Panel the general recommendation would be to use standard fire resistant cable, such as GLT Exports Fire Defence Cable, Firetuff™ , FP200 or an equivalent. These cables are screened, and will provide good EMC shielding when properly grounded at the panel. Certain system specifications may demand the use of a particular type of cable and due regard should be paid to this fact.

Depending on the environment, the cables may need mechanical protection (such as a conduit).

Mains wiring recommendations

The Mains supply to the VACIE is fixed wiring, using **Fire resisting** 3-core cable (Between 1 mm² and 2.5mm²), fed from an isolating double pole switch fused spur, fused at 3A. **IT SHOULD NOT BE CONNECTED THROUGH AN RCD.** This should be secure from unauthorised operation and be marked 'FIRE ALARM: DO NOT SWITCH OFF'. The supply must be exclusive to the Fire Panel. **MAKE SURE ANY SPARE ENTRY HOLES ARE COVERED WITH THE GROMMETS PROVIDED**

Mounting the fire alarm control panel

The Premier Evacs16 comes with many cable entry holes. If another entry hole is required, it is strongly recommended that the panel door is removed to avoid accidental damage. Also, the back plate which holds the loop cards and power supply should be removed and stored in a safe place. This would also help while fixing the back box to the wall.

Planning cable entry

The figure below shows the location of the cable entries to facilitate planning of wiring to be brought to the panel.

The grommets can be easily removed by a push from inside the control panel box.

If a grommet is removed, fill the hole with a brass cable gland. If any knockout is removed, but subsequently not used, it should be covered up.
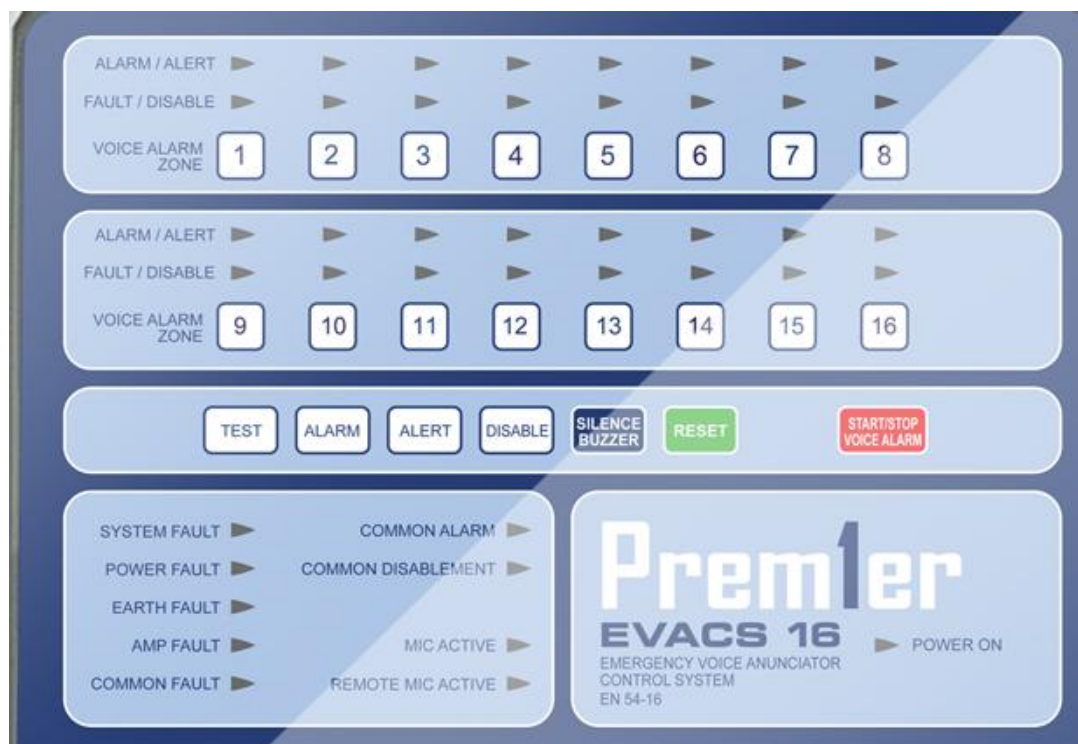
The 230Va.c. Mains cable must be fed into the enclosure via one of the cable entries at the top right corner of the back box. This cable must be connected to the mains EMI filter. The terminals on the EMI filter are labelled N G L (Neutral Ground/Earth Live).

Take care not to damage the VACIE during installation.
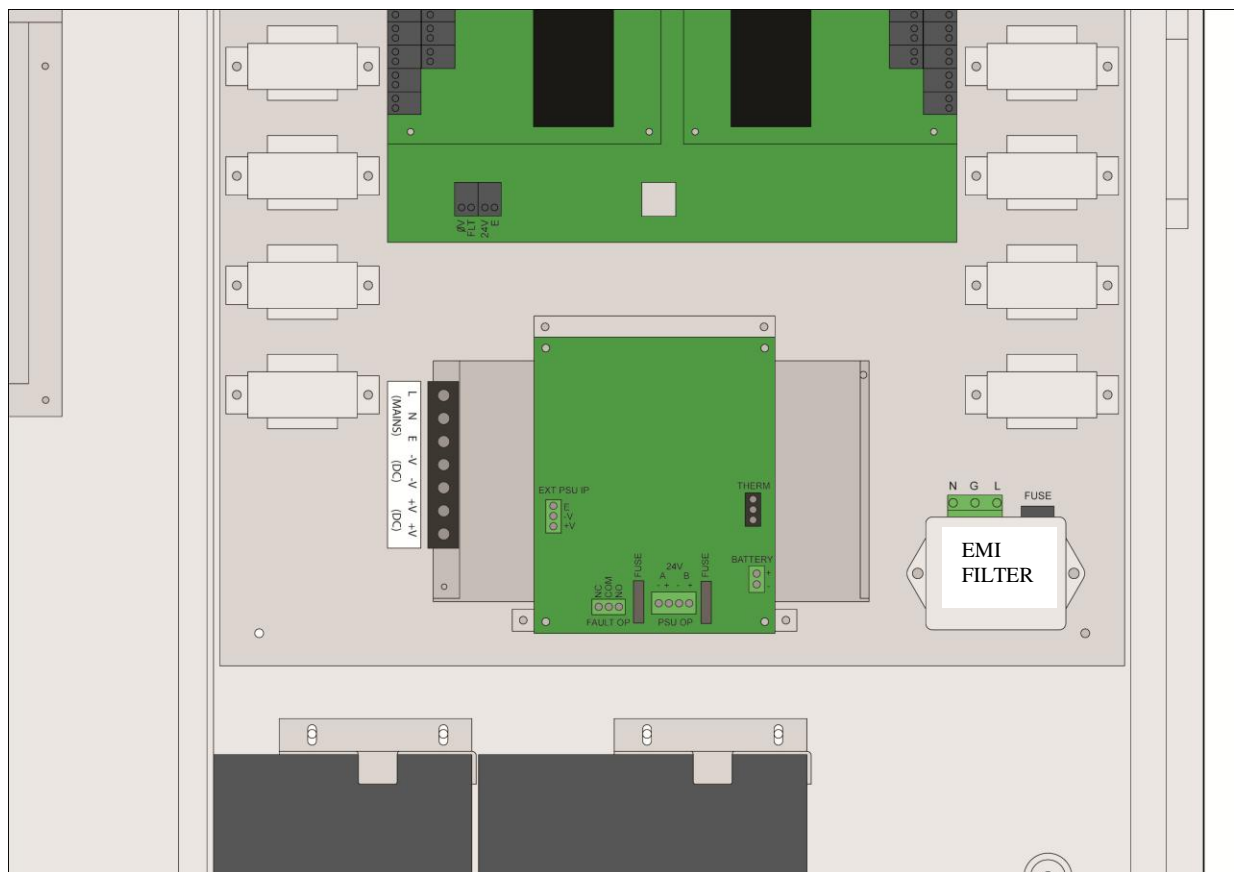
Display & Controls

Here is the fascia for the Premier Evacs16.

Display

The Premier EVACS16 has the following LED indicators:-

| LED	COLOUR	MEANING
POWER ON	GREEN	The system has mains and/or battery backup present. The panel showing this LED only is the normal condition
SYSTEM FAULT	YELLOW	The system may have developed a serious problem. Contact your local dealer
POWER FAULT	YELLOW	The System's PSU is reporting a problem
EARTH FAULT	YELLOW	The system has detected a wiring fault shorting to earth
AMP FAULT	YELLOW	There is problem with one of the systems amplifiers
COMMON FAULT	YELLOW	There is a fault on the system. Check specific LED for further information.
COMMON ALARM	RED	The system is playing the pre-recorded evacuate message.
COMMON ALERT	RED	The system is playing the pre-recorded alert message.
MIC ACTIVE	RED	The panel`s live emergency microphone is being used to broadcast a message.
REMOTE MIC ACTIVE	RED	The panel`s remote microphone is being used to broadcast a message
ALARM / ALERT ZONE 1 – 16	RED	The indicated zone(s) are playing the Alarm or Alert message (as indicated by the common Alarm/Alert LEDS)
FAULT/DISABLE ZONE 1- 16	YELLOW	The indicated zone (s) have a fault, or are in the disabled condition.

Controls

The Premier Evacs 16 has the following controls:-

LABEL	USE
TEST	Reserved for future use
ALARM	Used to initiate manual playback of the Evac / Alarm Message
ALERT	Used to initiate manual playback of the Alert Message
DISABLE	Used to disable one or more of the speaker channels
SILENCE	Used to silence the panels fault buzzer
RESET	Used to reset the system from the voice alarm condition
STOP / START	Used to Manually start playback of a selected message, or to stop an existing message.
1 - 16	Select buttons for channels 1 to 16

Speaker Circuits

Wiring the Speakers

The Premier Evacs 16 checks for line integrity by using a 10K End of Line Resistor on each speaker circuit.
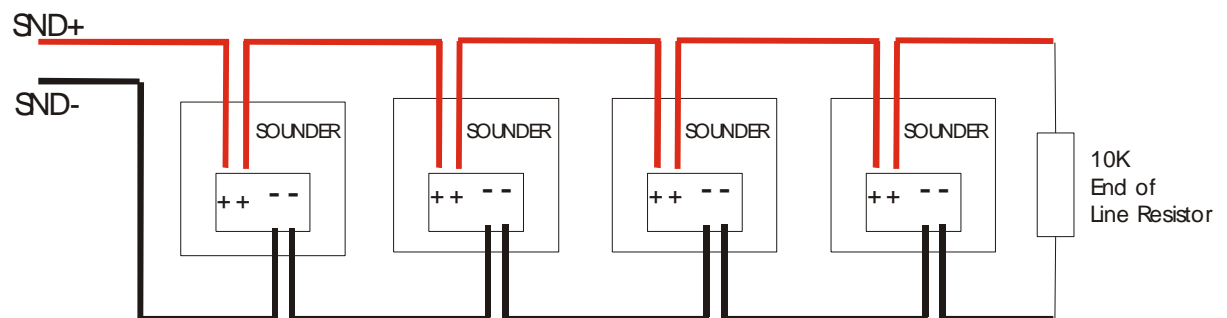
When the circuits have been connected if the panel reports a zone fault, check that the EOL resistor is securely connected and is the correct value.

Configuring the Voice Messages, and Trigger Inputs

On the Premier Evacs 16, the Voice messages can not be recorded at the panel. We have decided that this is not a suitable method of recording, as background noise, and probable poor acoustics would mean a poor quality message.

Instead any suitable Audio file can be uploaded. The file format is *.wav format, 16 bit, 1 channel, uncompressed 16,000 samples/sec (256kbps)

A custom message can be recorded on a PC, or in a sound studio if the best sound clarity is required. Alternatively, you can use one of the sample messages provided with the PC Configuration Software.

The Evacs 16 has 18 trigger inputs. There are inputs to play the Evacuate / Alarm message on all zones, the Alert message on all zones, and an individual input for each zone, which can be configured via the PC Configuration Software.

Sample configurations are:-

> Play alarm message on selected zone,
> Play alarm message on selected zone, and alert message on all other zones
> Play alarm message on selected zone, and alert on floor above & floor below.

For Details on configuring these options via a PC, please refer to PREMIER EVACS 16 PC CONFIGURATION MANUAL (GLT.MAN-142).

PC Configuration Software

This PC-based software package includes the following options:

1. *Select alert message*
2. *Select alarm / evacuate message*
3. *Select the sign-on and sign-off tones for the emergency microphone message*
4. *Move sliders to adjust speaker volume*
5. *Choose which message should be played on each channel*

For full details on configuring these options via a PC, please refer to
PREMIER EVACS 16 PC CONFIGURATION MANUAL (GLT.MAN-142).

Speaker Circuits

Wiring the Speakers

The Premier Evacs 16 checks for line integrity by measuring the impedance of the speaker line. It does not need an end of line element.
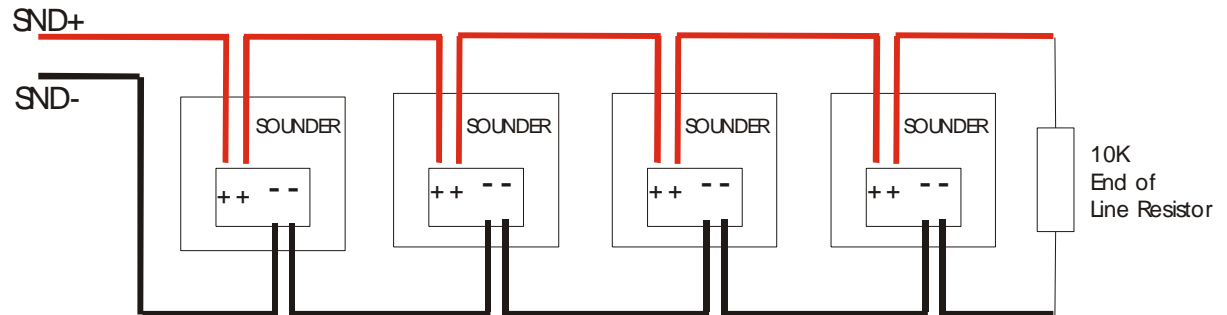
When the circuits have been connected the panel will report circuit faults. Press the Calibrate button on the rear of the display PCB to store the new line impedance settings.

Methods of Operating the Premier Evacs 16

The Premier Evacs 16 can operate in any one of the following ways:-

1. LIVE BROADCAST

The microphone is used to broadcast information about the alarm, and the responsible person would direct occupants what to do next. The Microphone broadcasts to all non-disabled channels.

2. PRE-RECORDED MESSAGE (MANUAL)

The Operator can select to play the pre recorded Evacuation or alert message to individual speaker channels. The message(s) are only played to the selected channels.

3. PRE-RECORDED MESSAGE (AUTOMATIC)

Some or all of the Premier Evac 16`s remote trigger inputs will be connected to I/O units in a fire panel. The panel will operate the I/O relays to link the relevant trigger to 0V. There are inputs for Evac on all channels, Alert on all channels, and an individual input for each channel, which can be configured via the PC Software. Sample configurations are:-

> Play evac / alarm on selected channel,
> Play evac / alarm on selected channel, and alert on all other channels
> Play evac / alarmon selected channel, and alert on floor above & floor below

As shown above, the number of channels operated will depend on the configuration of the remote inputs.

Resetting from a Voice Alarm Condition

The Evacs 16 can be reset in various ways, depending on how the Voice alarm condition was initiated.

If the microphone is used for a live broadcast, simply releasing the microphone will return the Evacs 16 to it`s normal condition.

If a pre-recorded message was started manually, it will need to be reset from the Voice Alarm Panel. Press Start/Stop to stop playing the message, then press reset to return the Evacs 16 to it`s normal condition.

If a pre-recorded message was started automatically by a fire alarm panel, resetting the fire alarm panel will reset the Voice alarm panel automatically. Alternatively, the message can be stopped by pressing Stop/Start on the Voice alarm Panel. (Note if reset is then pressed, and the triggering signal is still active, the Evacs 16 will return to the voice alarm condition.

Fault display & fault-finding

The Premier Evacs 16 panel monitor for the following faults:-

Power Supply Fault
Speaker Channel open circuit wiring fault
Speaker Channel short circuit wiring fault
Earth Fault
Amplifier Fault
System Fault

The Premier Evacs 16 Voice Alarm panel also has a General Fault LED that will light when any fault is present.

Most of these faults will need to be checked by an engineer.

All faults in the Premier Evacs 16 are NON-LATCHING. IE they can not be reset with the reset button. They will clear automatically when the fault has been fixed.

Fault Finding

Power Supply fault

A power supply fault is indicative of one or more of the following faults: -

Loss of Mains power
- Check that 230V AC is present at the mains terminal block
- Check mains fuse
- Check charger fuse FS1.

Loss of Battery power
- Check that 2 X 12V batteries are fitted in series to give 24V backup
- Check battery fuse
- Check that battery connections are secure.
- Check that the batteries are not over 5 years old

Loss of Charger
- The Power supply will monitor the charger circuit. In the rare event of a component failure that affects the charger, the PSU will bring up a fault.

Loss of Battery Capacity
- The Power supply will monitor the Battery condition. If it detects a high internal resistance, which usually means a loss of capacity in the battery, it will bring up a fault.

Speaker Circuit Fault

A Speaker Circuit Fault is indicative of one or more of the following faults:-

Speaker Circuit Open Circuit fault.
- Check that there are no breaks in the cable, and that all screw connections are secure.
- As a panel check, disconnect the circuit indicating the fault, and press the calibrate button. If the fault clears, the panel is working correctly.

Speaker Circuit Short Circuit Fault
- Check that all speakers are fitted the correct way round.
- Check than no other devices have been connected to the speaker circuit.
- Check for shorts to the cable screen.
- As a panel check, disconnect the circuit indicating the fault, and press the calibrate button. If the fault clears, the panel is working correctly.

Speaker Failure

Because the Premier Evacs 16 monitors the speaker circuits for a change in impedance, the system can usually detect a broken speaker. For example a broken wire to the drive cone will not effect the speaker line`s continuity, but it will effect its impedance.

Presently, the only way to check for this is by verifying sound output at each speaker on the speaker circuit reporting the fault.

Earth Fault

The Premier Evacs 16 monitors it`s cabling for short circuits to earth. In the event of an earth fault, disconnect the speaker circuits one at a time to locate the one giving a problem.

Amp Fault

The Premier Evacs 16 monitors Amplifiers for correct operation. If one of it`s power amps reports a fault, the Evacs 16 will report it. Try resetting the panel to clear the fault. If the fault persists, contact your dealer.

System Fault

The Premier Evacs 16 monitors its internal software for correct operation. If it detects a possible problem, the Evacs 16 will report it. Try resetting the panel to clear the fault. If the fault persists, contact your dealer.

Specifications

Electrical Specifications

ELECTRICAL DESCRIPTION	VALUE
MAINS VOLTAGE	230V AC +/- 10% @ 50/60 Hz
BATTERY VOLTAGE	24V DC (2 X 12V SLA BATTERY)
CHARGER SIZE	920mA
SPEAKER LINE VOLTAGE	100V
SPEAKER LINE CIRCUITS	16 x 15 Watt
FAULT OUTPUT	1 x RELAY SELV (1A MAX)
PANEL INPUTS	1 X COMMON EVACUATE 1 X COMMON ALERT 16 X PROGRAMMABLE
CHARGER VOLTAGE	27.6V DC (NO BATTERY CONNECTED)
MAINS FAILED CURRENT (BUZZER ON)	210mA
MAINS FAILED CURRENT (BUZZER OFF)	150mA

Enclosure Specifications

DESCRIPTION	VALUE
ENCLOSURE SIZE	485 x 732 x 147 mm
TOP CABLE ENTRIES	36 x 19mm DIA GROMMETED ENTRIES
BOTTOM CABLE ENTRIES	6 x 19mm KNOCKOUT ENTRIES

Fuse Ratings

FUSE NO	DESCRIPTION	RATING
FS1	Charger Fuse	1.6A time delay 5 x 20mm glass
FS2	Battery Fuse	1.6A time delay 5 x 20mm glass
FS3	Sounder circuit)	800mA time delay 5 x 20mm glass
INLET FUSE	Mains Protection Fuse	2A Quick Blow HBC 5 x 20mm ceramic