REDBACK®

# A 2075 Emergency Evacuation Controller

# OPERATING INSTRUCTIONS

This easy to install controller features Auto, Manual, and Isolate modes.

**Auto Position:** When selected to the auto position the panel will respond to any signal received from the buildings Fire Indicator Board (FIB), if connected. This signal then activates the alert tone. If, after a pre-set time this condition has not been attended to, the panel will change to the evacuation mode. The evacuation tone will continue to sound until the panel has been reset. In the auto position the front panel alert, evac and cancel controls are inoperative. All other functions will work, ie. paging, bell chime and BGM.

**Manual Position:** In the manual position any of the functions may be initiated from the controls on the front panel, i.e. Alert, Evac, or PA. This allows the operator to select either of these functions as required

**Other Functions:** Provisions have been made for BGM source to be played through the controller. BGM is automatically muted when any other function is operated. A microphone input has been included on the front panel. This can be used for either general or emergency paging. Paging over-rides all other functions. A pre-announcement chime is available on the microphone input. This can be switched on or off internally as preferred. Included is a unique tone or bell chime for signalling lunch breaks, start of class etc. This can be operated from the front panel or via contacts on the rear panel for remote activation ie. by a time clock or remote switch.

## FEATURES

- Stand alone control unit
- Standard 1u 19" rack mount case
- Interfaces with Fire Indicator Boards
- Remote operation of Alert , Evac, Chime & Cancel tones.
- 240V mains and 24V DC operation
- Auto/Manual/Isolate keyswitch
- Internationally accepted IEC mains socket (240V AC operation).
- Key switch to 003 standard
- Local operation of Alert, Evac and PA
- Provision for voice over message
- Microphone socket for PA use
- Provision for BGM
- Provision for Auxiliary input with front volume control.
- Bell chime facility
- Switched 24V DC output for override relays on volume controls
- Switched 24V DC output for strobe operation for Alert mode.
- Switched 24V DC output for strobe operation Evac mode.
- On-board timer for remote alert activation adjustable from 30secs to 7.5min in 30second increments
- Externally operated inputs are activated by switching to ground.
- Auxiliary level output
- Suitable for any amplifier with an auxiliary input
- Can be used as a standard PA system.
- 12 Month Warranty
- Australian Designed and Manufactured

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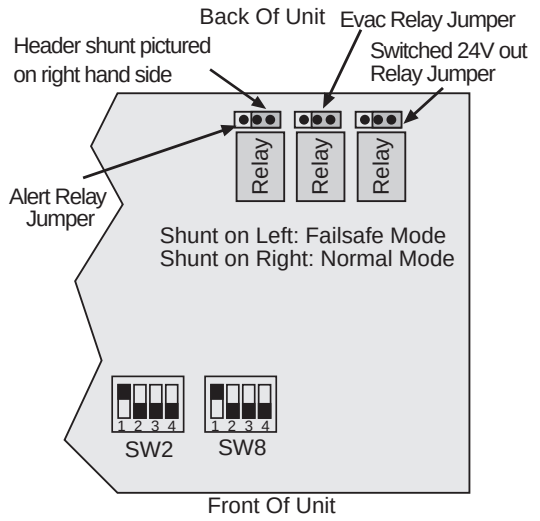



*<u>Figure 1.</u> Location of the DIP switches and the fail safe/normal override mode selection jumpers*

# INSTALLATION

**Internal Settings**

Before connecting the unit to a PA system, we recommend you first set the internal settings. These are as follows:

**1. Override relay jumper settings**

An override relay is necessary where attenuators are used so that the alert tone, evac tone, or message is broadcast at full volume regardless of the volume setting on the individual volume control.

With the jumper shunt on the right hand side (see Fig 1.) the override relay is set to NORMAL mode. In this position 24V appears at the 24V DC output terminals when any of the alert tone, evac tone, voice over message or paging functions are activated.

With the jumper shunt set to the left hand side position, the override relay is set to the FAIL SAFE mode.

In this mode, 24V DC appears at the 24V DC output terminals to allow the fail safe attenuators to operate normally. When any of the alert tone, evac tone, voice over message or paging functions are activated, 24V is removed from the terminals.

**Alert/Evac relay settings**

Alert/Evac switched 24V outputs may be used to run external systems such as strobes in unusually noisy environments.

With the jumper set to the right hand position (refer figure 1) the corresponding relay is set to NORMAL mode. In this position 24V appears at either the Alert 24V Out contacts or the Evac 24V Out contacts when the Alert or Evac tone is activated respectively, i.e. setting off the Alert/Evac will cause the external device to switch on.

With the jumper shunt set to the left hand side position, the respective Alert/Evac relays are set to FAIL SAFE mode.

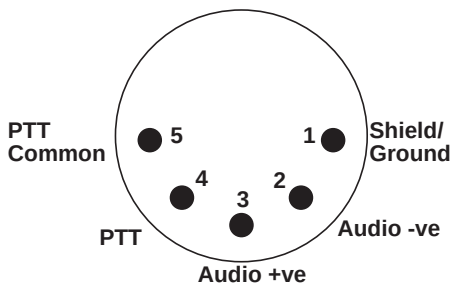
In this mode,24V DC appears at the Alert/Evac 24V Out contacts continuously until the corresponding Alert or Evac tone is activated for whatever reason. When this occurs the 24V is removed from the corresponding terminals, i.e. an external device connected to the corresponding terminals will cease to function.

The factory setting for all jumper settings are NORMAL.

**2. Evacuation Timer DIP Switch settings.**

The left hand DIP switch controls the time period (in AUTO mode) before the unit switches from the alert tone to the evac tone. This time period can be switched from 30 secs to 7.5 minutes in 30 second increments. For the setting of this DIP switch, refer to Table 1 and Figure 1 (SW2).

Note that this table also appears inside the unit for your convenience when setting up the controller. This option is factory set to 30 seconds.




*<u>Figure 2.</u> 5 Pin XLR socket wiring diagram. As viewed from the <u>front</u> of the A 2075.*

**A 2075 DIP Switch Settings**

**<u>Evac Timer SW2</u>**

| Auto Evac Timer | DIP Switch 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| 30 sec | ON | OFF | OFF | OFF |
| 60 sec | OFF | ON | OFF | OFF |
| 90 sec | ON | ON | OFF | OFF |
| 120 sec | OFF | OFF | ON | OFF |
| 150 sec | ON | OFF | ON | OFF |
| 180 sec | OFF | ON | ON | OFF |
| 210 sec | ON | ON | ON | OFF |
| 240 sec | OFF | OFF | OFF | ON |
| 270 sec | ON | OFF | OFF | ON |
| 300 sec | OFF | ON | OFF | ON |
| 330 sec | ON | ON | OFF | ON |
| 360 sec | OFF | OFF | ON | ON |
| 390 sec | ON | OFF | ON | ON |
| 420 sec | OFF | ON | ON | ON |
| 450 sec | ON | ON | ON | ON |

*Table 1.*

**<u>Chime Options SW8</u>**

| Chime | Dip Switch 1 | 2 |
|---|---|---|
| No chime | OFF | OFF |
| Single chime | ON | OFF |
| Dual chime | ON | ON |

*Table 2.*

**<u>Bell Options SW8</u>**

| Front Switch | Rear Terminal | Dip Switch 3 | 4 |
|---|---|---|---|
| Cont. | | OFF | |
| Mom. | | ON | |
| | Cont. | | OFF |
| | Mom. | | ON |

*Table 3.*

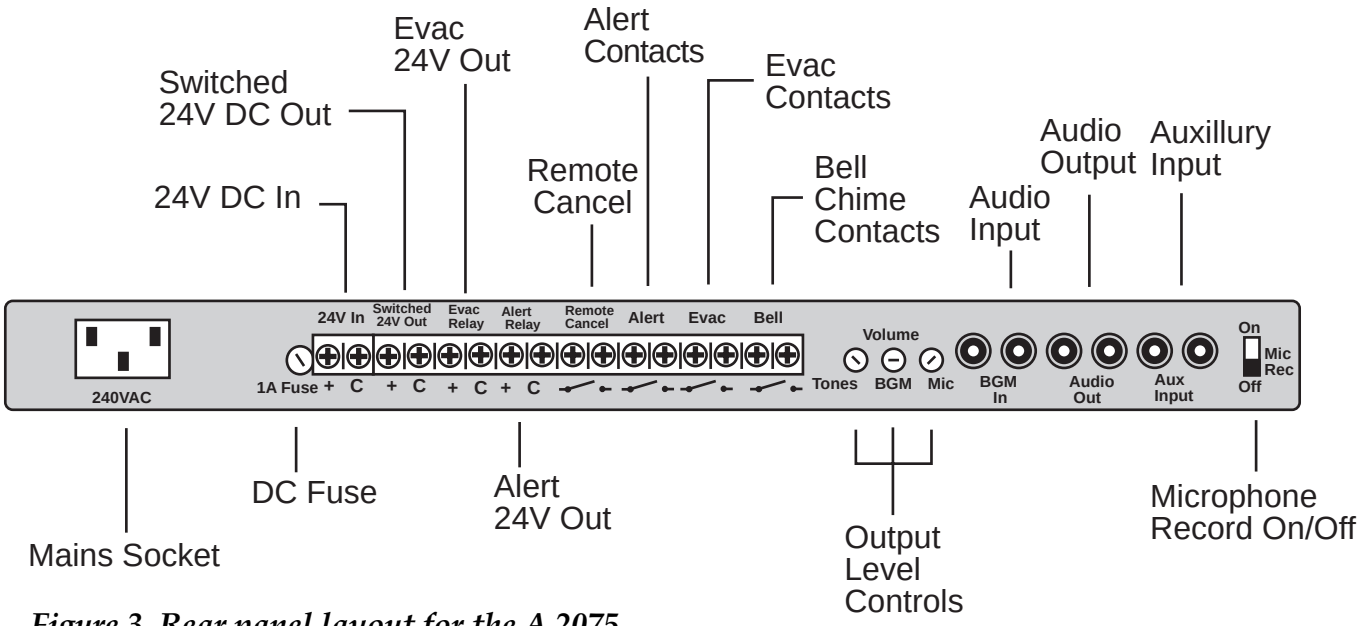



***Figure 3.** Rear panel layout for the A 2075*

**3. Chime Options DIP Switch Settings**

The right hand DIP switch, SW8, is used to configure the pre-announcement chime and bell options (see Tables 2 and 3 and Figure 1).

Switch 1 is for the paging mic input and is set as follows:

Set to OFF: No pre-announcement chime when paging.

Set to ON: Inbuilt pre-announcement chime is activated immediately upon commencement of paging. This is factory set to ON.

Note that this chime is not activated when the automatic voice over message sounds.

Switch 2 sets the pre-announcement chime to either a single chime or a dual chime. This is factory set to OFF.

Switch 3 sets the bell front panel switch to either continuously sound or momentarily sound. In the OFF position, the tone will sound for as long as the button is depressed. In the ON position, the bell tone will sound for a short moment irrespective of how long the button is held down. This is factory set to OFF.

Switch 4 sets the Bell tone rear panel switch to either a continuous tone or a momentary tone. In the OFF position, the tone will sound for as long as the rear panel bell contacts are closed. This is ideal for a school siren or end - of-shift bell. In the ON position, the bell tone will sound for a short moment irrespective of how long the contacts are closed. This is factory set to ON.

These chime options are also included on the inside of the unit to assist you when setting up the unit.

## Wiring Up The Unit

**Microphone input.**

Connection details for the 5-pin XLR connector are shown in fig.2. For use with an unbalanced microphone, short pins 1 and 2 together on the mic plug.

**Remote Cancel**

These contacts are for remote cancelling of alert/evac tones in auto mode.

**Rear Connector**

The "24V DC IN" is for connection to a 24V power supply (battery backup) so that the unit will function in case of a mains power failure.

**24V Switched Out:** These contacts are for connection to override relays in remote volume controls. Refer to "Internal Settings" for details.

**Alert Contacts:** These contacts are for remote triggering of the alert tone in the auto mode. ie For interfacing to Fire Indicator Boards, "Break Glass" alarms etc. Connecting these terminals together will activate the alert tone.

**Alert 24V Out:** These contacts are for connection to external devices operating from 24V DC. Refer to "Internal Settings" for details.

**Evac Contacts:** These contacts are for remote triggering of the evac tone in auto mode. Connecting these terminals together will activate the evac tone.

**Evac 24V Out:** These contacts are for connection to external devices operating from 24V DC. Refer to "Internal Settings" for details.

**Bell Chime Contacts:** These contacts are for remote triggering of the bell chime sound. This bell chime can be used for signalling lunch breaks, start of classes, and can be triggered from a time clock or similar device. For details of this, see Installation instructions for the bell tone. Connecting these terminals will activate the bell.

**BGM Input:** This input is for connecting a background music source to the controller. The stereo RCA sockets are combined internally to form a mono signal.

**Auxiliary Input :** This input is for connecting to an auxiliary source to the controller where the source is to be controlled via the front volume. The stereo signal is combined internally to form a mono signal.

**Audio Output:** This consists of stereo RCA sockets with an output of 0dBm into a 600Ω input.

This is suitable for most PA amplifier auxiliary inputs.

## Instructions for Use

**Mains Power Switch.** This switches mains power to the unit on and off. When switched to the off position, 24V DC connected to the unit's rear panel terminal will still power the unit.

**LED Power Indicator.** This LED will be lit when the unit is being powered by either 240V AC or 24V DC.

**Key Switch.** The unit features 3 modes of operation. These are **Auto**, **Manual** and **Isolate**, selectable via the keyswitch. The switch is keyed to a 003 standard key profile, and will allow removal of the key in the Auto position only.

**Isolate Position:** This isolates the unit so that the alert, evac and bell tones will not function.

**Auto Position:** In the auto position the unit will respond to the rear panel alert or evac contact inputs. The front panel alert, evac and cancel switches are inoperative in this mode. This is designed for interfacing to Fire Indicator Boards or "Break Glass" alarms, etc. If the alert tone is triggered the unit will sound for a preset time, and will change to the evacuation mode. This preset time is determined by the internal DIP switch settings (see Internal Settings). The evacuation tone will continue to sound until the panel has been reset.

Once the alert tone has been triggered, triggering the evac contact will automatically change the unit from alert to evac mode.

Where the voice-over module option is fitted and the alert is triggered, the unit will sound the alert tone for a preset time, then the evac tone for four cycles, sound the voice over message twice, then sound the evac tone for four cycles, and continue in this evac/voice over sequence.

Note 1: The tone that is being sounded (ie alert, evac, bell) will be indicated by the illumination of the relevant front panel indicator.

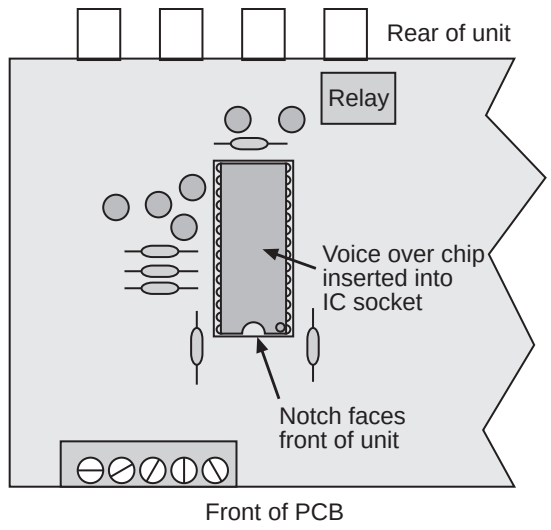



***Figure 4.** Installation of the Voice Over Option IC. The notch on the IC package faces towards the front of the unit.*

Note 2: In the Auto position, all other functions will work, eg BGM, bell chime, and paging.

Note 3: To cancel a tone in Auto mode, either use the remote cancel contacts or the key switch switched to manual mode & the cancel button. Note the cancel button will need to be depressed for 2 seconds. This is to prevent accidental cancelling of a tone.

**Manual Position:** In the manual position any of the functions may be initiated from the front panel controls (ie alert, evac, bell chime, and cancel). This allows the operator to select any of the functions as required.

In this position the rear panel alert and evac contacts are inoperative.

Depressing the alert switch will activate the alert tone until it is reset. The alert tone is reset by depressing the cancel button. Note the cancel button will need to be depressed and held in for 2 seconds.

The alert tone can be changed to an evacuation tone simply by depressing the evac switch. Note the evac button will need to be depressed and held in for 2 seconds.

Where the unit is fitted with a voice over module the evacuation tone will sound for four cycles, then play the voice over message twice, and repeat this sequence until it is cancelled.

**Microphone Input:** This microphone input can be used for either general or emergency paging. Paging overrides all other functions. A pre-announcement chime is available on the microphone input (refer Installation Instructions). Note that a push to talk microphone is required.

**Background Music:** BGM is automatically muted when any other function is operated.

**Auxiliary Input:** This is automatically muted when another function apart from BGM input is operated.

**Rear Panel Volume Controls:** Volumes are set as follows:

Tones: This sets the output level of the alert, evac and bell chime tones and the voice over message. Set this volume control first.

BGM: This sets the output level of the background music source connected to the BGM input RCA sockets.

Mic.: This sets the paging output level. Set this control after setting the tones volume control as the mic volume is relative to the tones volume. Adjusting the tones volume up will increase the mic volume, and adjusting the tones volume down will decrease the mic volume.

## Function Priority

The order of priority for the functions on the unit is as follows:

Keyswitch in **Auto** position:

1. Paging
2. Alert / Evac Tone
3. Bell Chime
4. BGM/Aux.

Keyswitch in **Manual** Position:

1. Paging
2. Bell Chime
3. Evac
4. Alert
5. BGM/Aux.

## Voice Over Message Option Installation

1. Disconnect the unit from mains power and 24V DC power.

2. Remove cover and place integrated circuit in the spare socket on the PCB as pictured in fig.4. Ensure that you do not contact the legs of the IC as these can be damaged by a static discharge. Ensure also that the IC is orientated with the notch near pin 1 toward the front of the unit.

3. Replace the cover and re-connect the unit to the power source.

**Recording of Voice Over Message**

1. Connect a push to talk microphone to the front panel XLR input socket.

2. Set the rear panel Mic Record switch to ON.

3. Use the microphone PTT button to start recording your message. The message can be any length from 1 to 16 seconds.

4. Once the message is recorded set the Mic Record switch to OFF. Recording is now complete.

5. To re-record the message simply follow steps 2 to 4 again.

## Troubleshooting

| Symptom | Solution |
|---|---|
| Unit does not function | Ensure Mic Record switch is OFF |
| Low Level Recording | Ensure that a good quality mic is being used and the operator is speaking clearly into the mic. |
| Mic Volume Level is Low | Adjust Mic Volume |
| Alert/Evac Tone Levels are Low | Adjust Tone Volume |
| No power to unit from AC Mains. | Check power to unit. If power is OK,and unit still fails to power up, refer to authorised servicing centre. |
| No power to unit from 24V DC. | Check fuse and replace with M205 type 1A fuse if required |
| Front Volume control not functioning | Volume control functions on Aux. input only, check connections to rear of unit. |

## Specifications

**OUTPUT LEVEL**:.....0dBm
**DISTORTION:**.....0.01%
**FREQ. RESP.:**.....140Hz - 20kHz
**SIGNAL TO NOISE RATIO:**
- **Aux/Music Input:**.....-90dB typically
- **Alert/Evac/Chime:**.....-70dB typically

**INPUT SENSITIVITY:**
- **Mic:**.....2mV Balanced
- BGM/**Aux Input:** .....300mV Unbalanced

**OUTPUT CONNECTORS:**
- **Audio Output:**.....RCA Stereo Socket
- **Switched 24V DC Out:**.....Screw Terminals
- **Alert 24V DC Out : .....**Screw Terminals
- **Evac 24V DC Out:** .....Screw Terminals

**INPUT CONNECTORS:**
- **Mic:**.....5 pin XLR
- **Aux Input:**.....RCA Stereo Socket
- **24V DC Power:** .....Screw Terminals
- **240V AC Power:** .....IEC Chassis Socket
- **Remote Alert, Evac, Chime, Cancel:**Screw Terminals

**MUTING:** .....PTT Via Microphone Switch Contact

**CONTROLS:**
- **Mic Input:**.....Rear Volume
- **BGM Input:** .....Rear Volume
- **Alert, Evac, Chime Tones:** .....Rear Volume
- **Auxiliary Input:**.....Front Panel Volume
- **Power:** .....On/Off Switch
- **Mode Selection:** ....Keyswitch Keyed to 003 Standard
- **Alert Switch:**.....Illuminated Push Switch
- **Evac Switch:**.....Illuminated Push Switch
- **Bell / Chime Switch:**.....Illuminated Push Switch

**INDICATORS:** .....Power on LED
**POWER SUPPLY:** .....240V AC or 24V DC
**DIMENSIONS:**.....≈ 482W x 152D x 44H
**WEIGHT:** ..... ≈ 2.5 kg
**COLOUR:**.....Black
**OPTIONS:**.....A 2076 Voice Over Chip

* Specifications subject to change without notice.



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