

Audio Visual Indicator V2.00a

Installation Guide



Aidcall operates a policy of continual product improvement and reserves the right to modify the specification of its products.

If any variation to the details in this document are suspected please contact Aidcall's Technical Support.

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1. PRODUCT OVERVIEW

Touchsafe Pro Audio Visual Indicators (AVI's) provide clear sign posting of a system call to the Nursing staff on duty. They can be configured to work alone as a simple visual indicator above a room door or bed but can also be setup in a "Follow Me" configuration to guide staff efficiently to the right place.

AVI's will illuminate different colours depending on the type of call in progress. The colours match the banners on the display panel and the colour of the button used to initiate the call, i.e. orange for a Nurse call, red for Emergency etc.

AVI's have an internal sounder, the on/off beep pattern indicates the type of call in progress, i.e. the quicker the beeps the higher the priority of the call.

AVI's require a data connection to the RS485 bus in the Master Display Panel, up to 128 AVI's with unique ID's can be installed per site, this can be increased to 255^[2] max if duplicate ID's are used and no Telecare Receivers (TCR's) are connected. AVI's are line powered in groups of 30 from a 12V DC 3A battery backed power supply unit - multiple PSU's may be required per site.

















^[2] The total number of AVI's + TCR's connected on the RS485 bus must not exceed 255.






The "Follow Me" feature is only available with AVI V2.00a firmware and Touchsafe Pro Panel V2.00a software onwards.

2. IMPORTANT SAFETY INSTRUCTIONS

	Read and understand these instructions before use. Keep these instructions for future reference.
	Take care when working on step ladders during installation or service.
	Isolate the mains supply before removing power supply covers.
	Do not operate this product with the Lens Cap and Diffuser removed. Brightness of light may cause eye injury.
	Do not disassemble this product or attempt to repair it yourself.
	No user serviceable parts inside. Refer all servicing to qualified service personnel.
	This product should only be powered by 12V DC.
	Danger of explosion if the PSU rechargeable battery is incorrectly replaced. Use only manufacturer approved battery as identified in this manual. Refer replacement to qualified service personnel.
	Do not expose to direct sunlight.
	Do not submerge in water and do not use in damp or humid conditions.
	Do not expose this product to dripping or splashing water. Liquids can cause a failure and/or a fire hazard.
	Clean with a hard-surface disinfectant wipe or a damp cloth and a non-abrasive cleaning product. Polish with a dry duster. DO NOT use a wet cloth.
	Avoid using harsh, abrasive or corrosive cleaning agents or detergents (e.g. scouring powders, bleaches, polishes, etc.) when cleaning this product.
	At the end of its life this product should be disposed of and recycled in accordance with the environmental regulations. See the Regulatory Information in section 3 below.

3. REGULATORY INFORMATION

	<p>This symbol on the product indicates it complies with all relevant EU Directives as required by law. Safety of Information Technology Equipment; EN 60950-1:2006+A12:2011 Electro Magnetic Compatibility; EMC 2004/108/EC Restriction of Hazardous Substances; RoHS 2011/65/EU A copy of the complete Declaration of Conformity is available from Aidcall.</p>
	<p>This symbol on the product indicates it is classed as Electrical or Electronic Equipment and should not be disposed of with other commercial waste at the end of its working life. The Waste of Electrical and Electronic Equipment (WEEE) Directive (2012/19/EU) has been put in place to recycle products using the best available recovery and recycling techniques to minimise impact on the environment, treat hazardous substances and avoid increasing landfill. For product disposal please contact your supplier and check the terms and conditions of the purchase contract and ensure this product is not mixed with other commercial waste for disposal.</p>
	<p>This symbol on batteries indicates separate collection. Batteries contain chemicals that can be hazardous to health and the environment and should not be disposed of in the waste bin. The EU Directive (2006/6/EC) has been put in place to ensure the safe disposal and recycling of batteries. Return used batteries to your supplier or drop-off at your local municipal waste recycling depot.</p>

4. MAINTENANCE & CARE

For peace of mind and to ensure your system is maintained to the highest standard Aidcall recommend an annual maintenance contract. This will provide vital assistance in times of need from a nationwide team of trained Service Engineers who specialise in wireless Nursecall systems.

A preventative maintenance visit (PMV) is also available from Aidcall, this covers the replacement of all batteries, a full system test, software updates (where applicable) and a Service Certificate.

For more information on Maintenance Contract Packages and PMV's please contact our customer services team on 01670 357431 or visit our website; www.aidcall.co.uk/healthcare/support/maintenance

MONTHLY MAINTENANCE

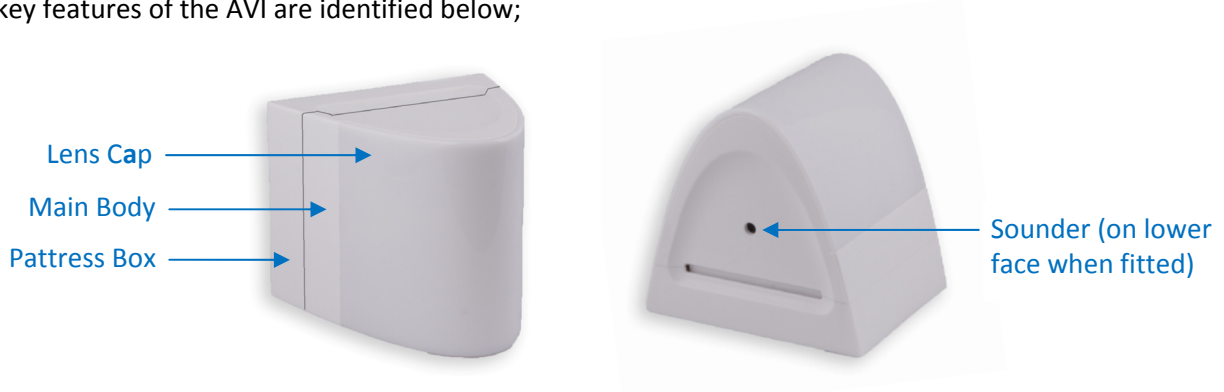
AVI's require no regular maintenance, they do not include batteries and they have no filament lamps that may fail or require replacement. If any AVI's show signs of external damage they should be replaced immediately by a Service Engineer. Products needing repair can be returned via the website; www.aidcall.co.uk/healthcare/support/repair

ANNUAL MAINTENANCE







Standby rechargeable lead acid batteries in the AVI power supplies should be tested every year by a Service Engineer and replaced every 5 years. See section 9 for details of battery type.

5. AVI FEATURES

The key features of the AVI are identified below;



The AVI will flash different colours and emit different sound patterns depending on the type of call in progress;

Colours	Call Type	Sounder
 AMBER	Normal Nurse Call	1 Second ON – 3 Seconds OFF
 YELLOW	Assistance Call	1 Second ON – 1 Second OFF
 RED	Emergency Call	¼ Second ON – ¼ Second OFF
 BLUE	Cardiac Call	¼ Second ON – ¼ Second OFF
 GREEN	Nurse Present	Silent
 PURPLE	Follow Me Test	Silent

6. AVI INSTALLATION

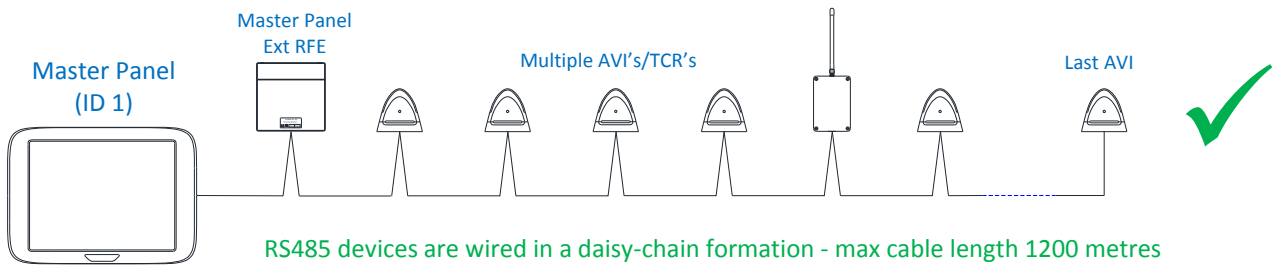
AVI's are designed for internal wall mounting only – they are not suitable for external applications.

AVI's are wired on a 2 pair bus cable; 1 pair power and 1 pair data. The data connection must be taken from the RS485 Port on the Master Display Panel (ID 1) and is common to all AVI's on the site. The power connection is taken from additional 12V DC 3A battery backed PSU's – the number of PSU's required will be determined by the total number of AVI's being installed.

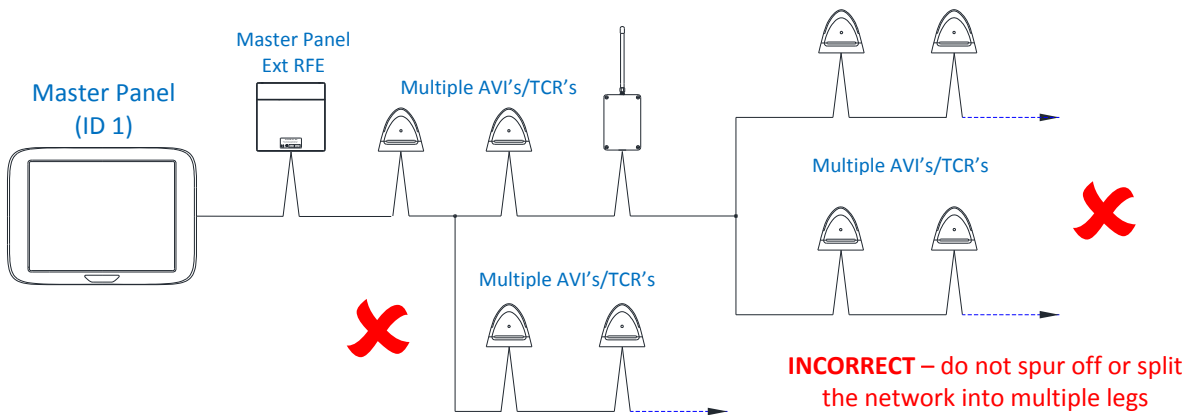
- A maximum of 30 AVI's can be connected per PSU (wired in 3 legs of 10 not exceeding 70 metres)
- The total number of AVI's with unique ID's is 128 per site
- Up to 255 AVI's can be connected if ID's are duplicated
- If TCR's are connected then the total number of AVI's + TCR's must not exceed 255
- The Master Panel external RFE may also be connected to the RS485 bus
- The total length of the RS485 bus wiring should not exceed 1200 metres

6. AVI INSTALLATION

It is important that the RS485 data bus wiring network is connected in one continuous “daisy-chain” through all AVI’s (plus optional Master Panel RFE and TCR’s) installed on the scheme...

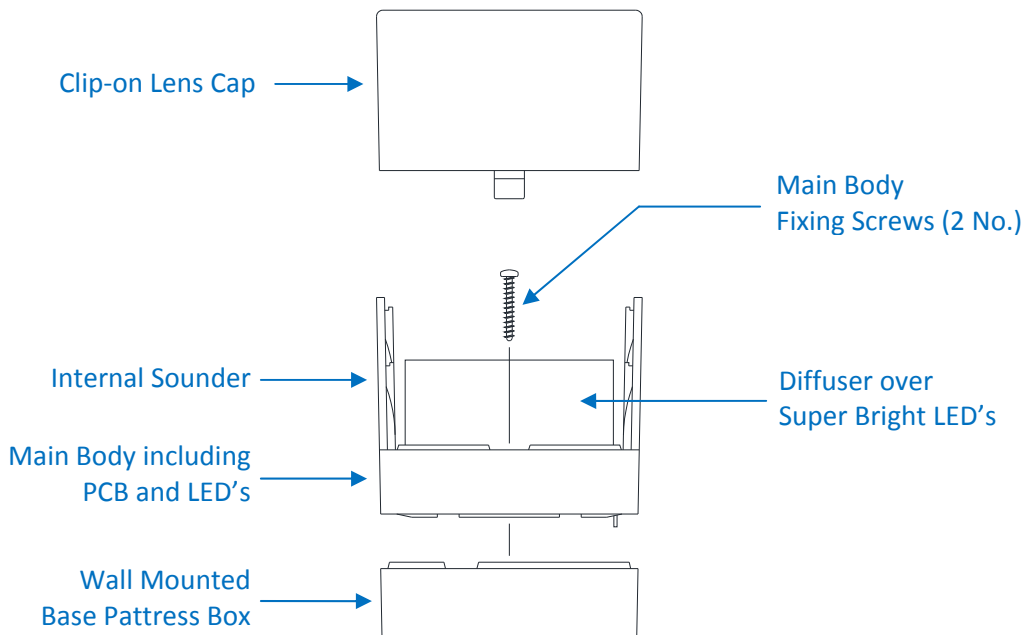


The RS485 data bus must not be split into multiple legs from a mid-point in the wiring and small groups of devices should not be spurred off at any point in the network...



HOW TO OPEN AN AVI

Unclip the lens cap and remove the 2 screws fixing the main body of the AVI to the base pattress box.

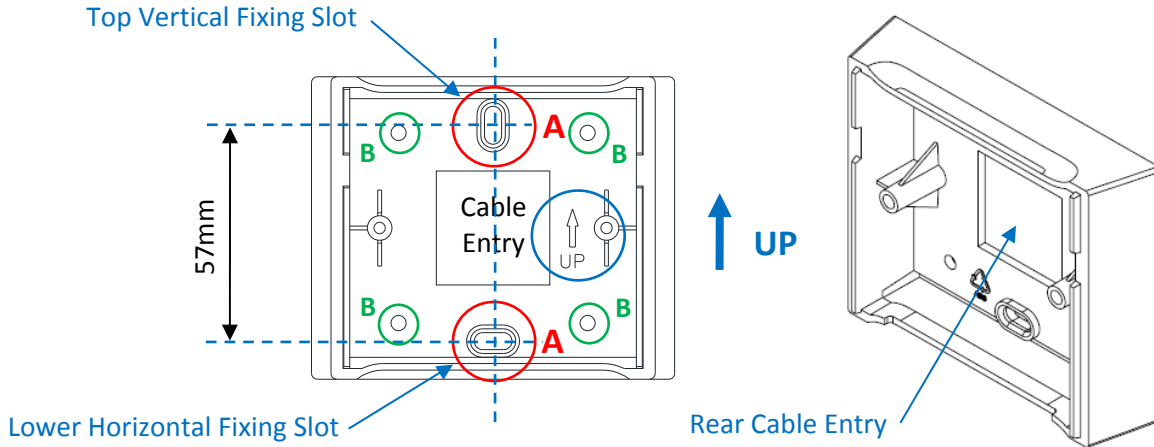


6. AVI INSTALLATION

Select the best location and fix the base pattress box to the wall with 2 x No.6 x 1 ¼" Pozi screws through the 2 fixing slots "A" shown below (57mm between centres).

Alternatively, use 4 screw fixings through holes "B" shown below (49mm between centres).

IMPORTANT: Pattress box must be fitted with the ARROW ↑ pointing up.



CABLE ENTRY

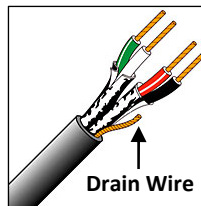
Cable entry will normally be via the 30mm square cut-out in the rear; if this is not possible then surface mini trunking should be used. Always remove the lens cap and main body of the AVI before drilling the pattress box for cable entry.

CABLE SPEC & COLOUR CODE

The AVI power & data bus should be wired using LSF (Low Smoke and Fume) 2 Pair 22AWG individually screened pairs of data cable (Belden Type 8723 or equivalent).

This is available from Aidcall in 100m reels; Part No. YW1715.

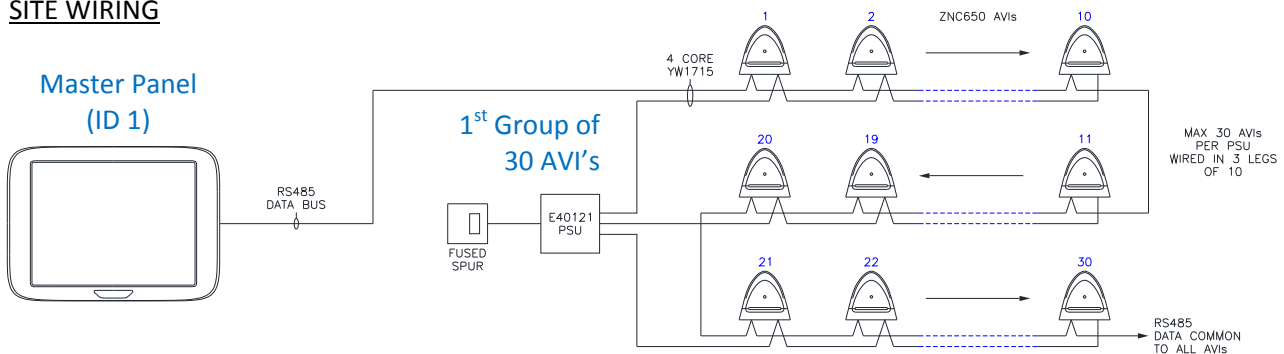
Pair No.	Colour	Terminal
1 (Power)	Red	12V
	Black	0V
2 (Data)	Green	RS485+
	White	RS485-



Note Ref. Drain Wire...

The drain wire is NOT connected. Do not cut-off, sufficient length should be left during installation for possible future use. Ensure the un-used drain wire is well insulated.

SITE WIRING

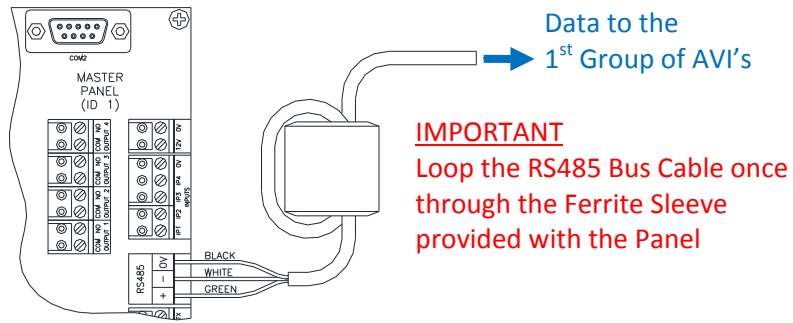


Each 12V 3A PSU can power a maximum of 30 AVI's – these should be split over 3 legs and the total cable length per leg should not exceed 70 metres. The RS485 data must be connected in one continuous leg from the Master Panel (ID 1) – cable length should not exceed 1200 metres.

6. AVI INSTALLATION

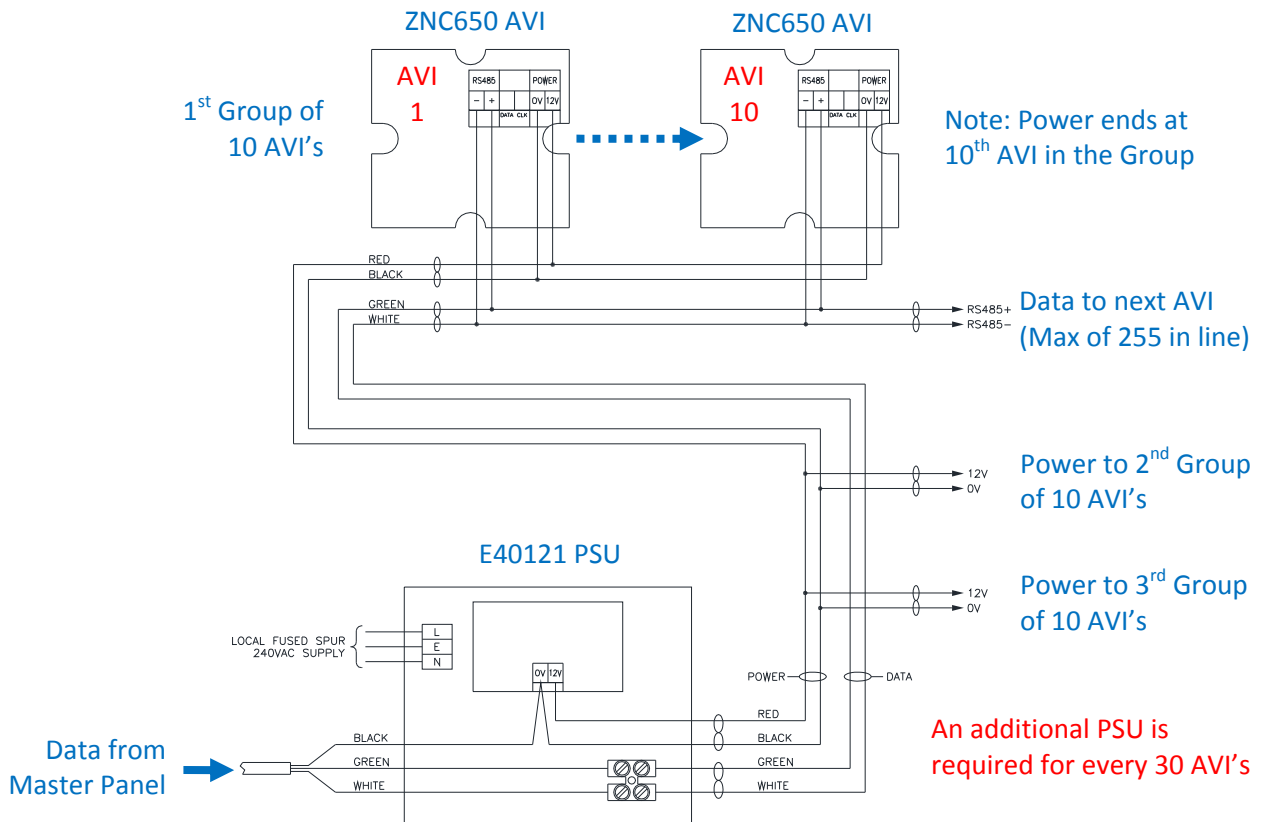
PANEL CONNECTION DETAILS


Connect the RS485 Bus Cable to the RS485 Port in the Master Panel (ID 1)



Note: the red wire and the drain wire are not connected

PSU & AVI CONNECTION DETAILS

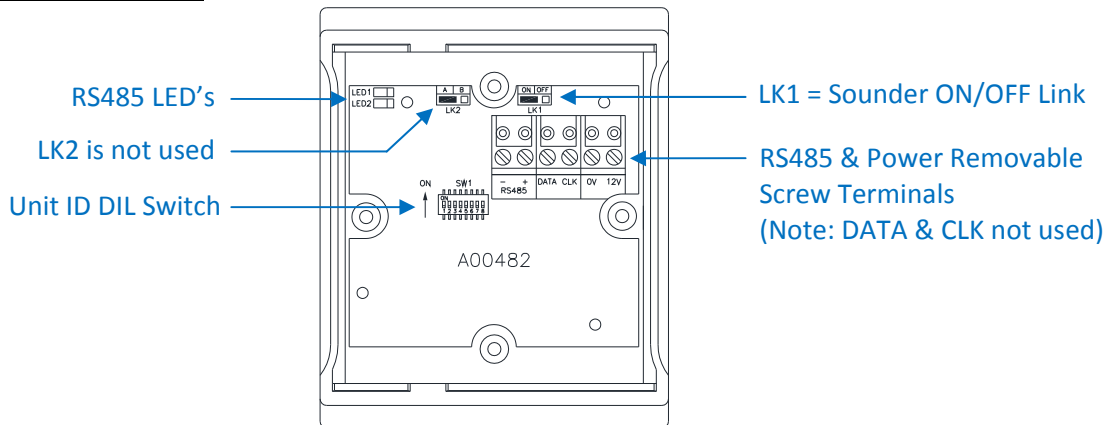




IMPORTANT: Ensure the 0V connection is common between the Master Panel, all PSU's and all AVI's (and any other devices on the RS485 bus). Failure to common the 0V may result in data corruption and spurious faults.

7. AVI SETUP

PCB INSIDE AVI MAIN BODY



UNIT ID DIL SWITCH

DIL switches 1 to 7 are used to set the AVI unit ID.

AVI ID's must start at 0 and run sequentially to 127 max – *duplicate ID's are allowed provided the total number of AVI's + TCR's on the RS485 bus does not exceed 255.*

AVI ID's are set in Binary as below;

DIL Switch No.	1	2	3	4	5	6	7	8
Binary Code	1	2	4	8	16	32	64	128
ID 0	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
ID 1	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
ID 2	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
ID 3	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
ID 4	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
	↓	↓	↓	↓	↓	↓	↓	↓
ID 127	ON	ON	ON	ON	ON	ON	ON	OFF

Note: DIL switch 8 (128) is only used with V2.00a firmware onwards to set the common Emergency and common Cardiac AVI ID's – see Section 10 for details.

SOUNDER ON/OFF LINK

Move Jumper LK1 to the OFF position for no sound. With LK1 in the ON position the AVI will sound a different pattern depending on the call type/priority.

Call Type	Light Colour	Sound
Call	Orange	1 Sec ON – 3 Sec OFF
Assistance	Yellow	1 Sec ON – 1 Sec OFF
Emergency	Red	¼ Sec ON – ¼ Sec OFF
Cardiac	Blue	¼ Sec ON – ¼ Sec OFF
Nurse Present	Green	Silent

RS485 DATA LED'S

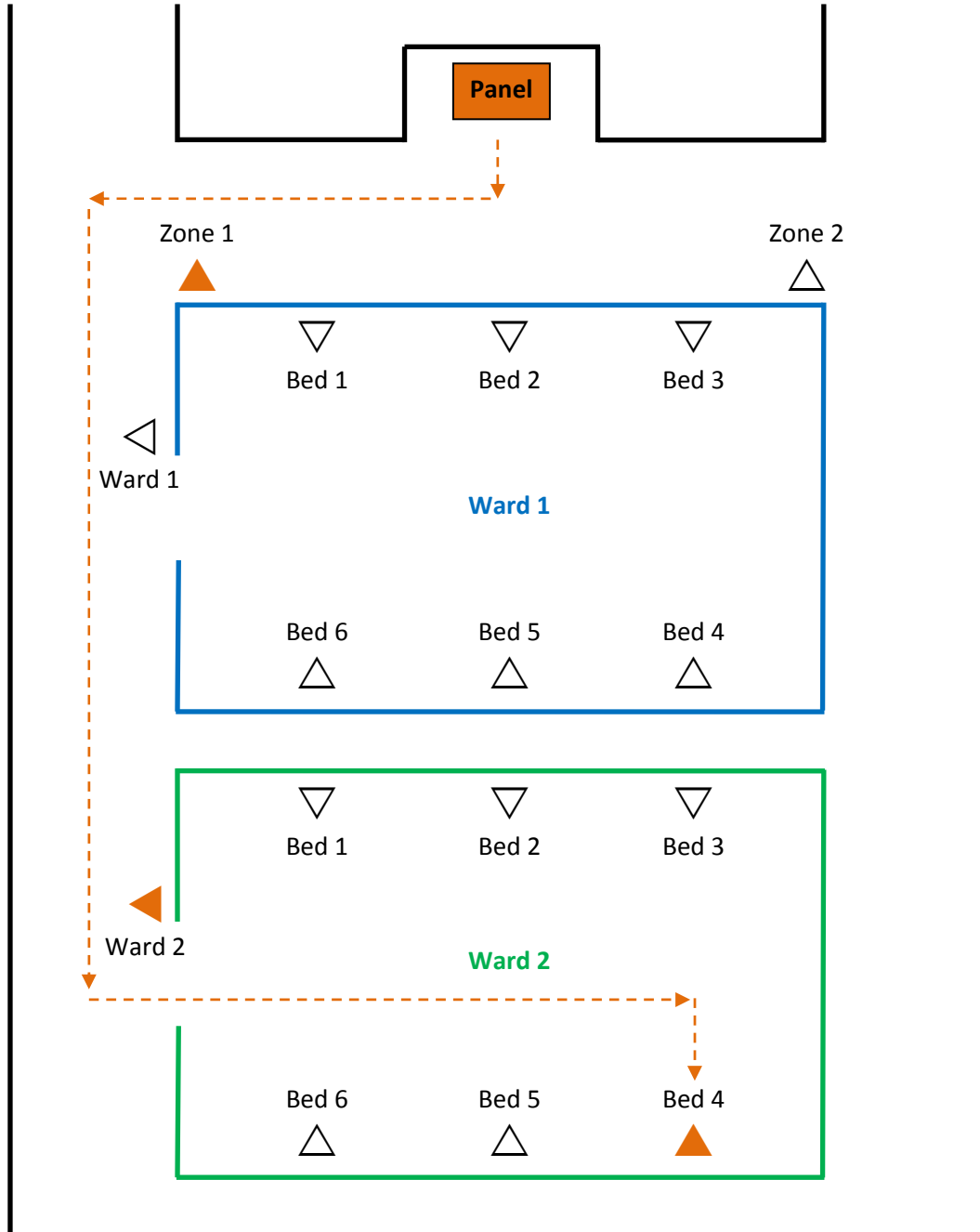
The 2 LED's on the PCB indicate the AVI is connected to the RS485 Bus. LED1 (yellow) should be permanently illuminated; LED2 (red) will flash when data is received to turn the AVI on/off.



Make a note of each AVI ID and its location during installation; you will need this information when setting-up the Master Panel.

8. STANDARD AVI CONFIGURATION

AVI's can be configured to operate alone or part of a group. When setting up the Master Panel each Call Point can be assigned to activate up to 3 AVI's; Zone, Ward and Bed. See example below, if a call was made from bed 4 in ward 2 then 3 AVI's could flash to guide Nursing staff from the Panel firstly to the correct corridor, followed by the correct ward entrance then to the exact bed within the ward.

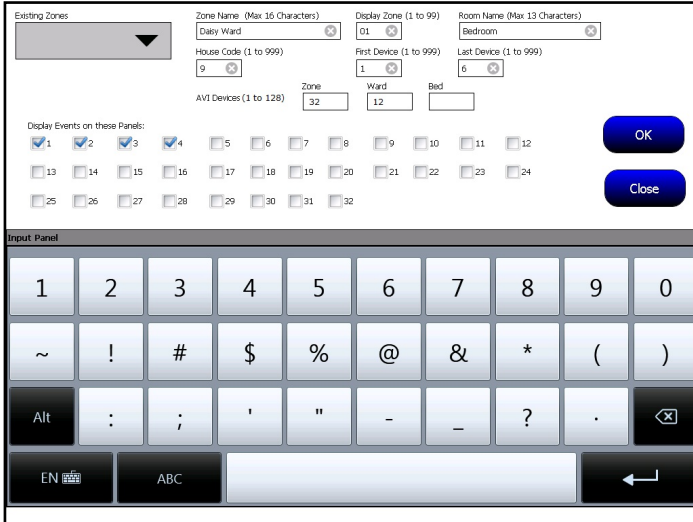


Normally Zone and Ward AVI ID's are created in the **Add ATX** option during the Master Panel setup. Individual Bed AVI ID's are then added from the **Edit Details** option after the Zones and Wards have been created. *All 3 AVI's can be added direct from the Edit Details option if preferred.* See the following page for details on setup.

8. STANDARD AVI CONFIGURATION

Go to the Touchsafe Pro Master Panel (ID 1) and Logon as an Engineer. If you are setting up multiple AVI's with common Zone and Wards then it's quicker to first select the **ADD ATX** option followed by the **ADD ZONE** option...

ADD ZONE



Select the Zone Name you require from the **Existing Zones** pull-down list.

Enter the ID of AVI you want to activate to indicate this **Zone** and the ID of the AVI you want to activate to indicate this **Ward**.

*Note the ID for individual **Bed** AVI must be added via the "Edit Details" page below.*

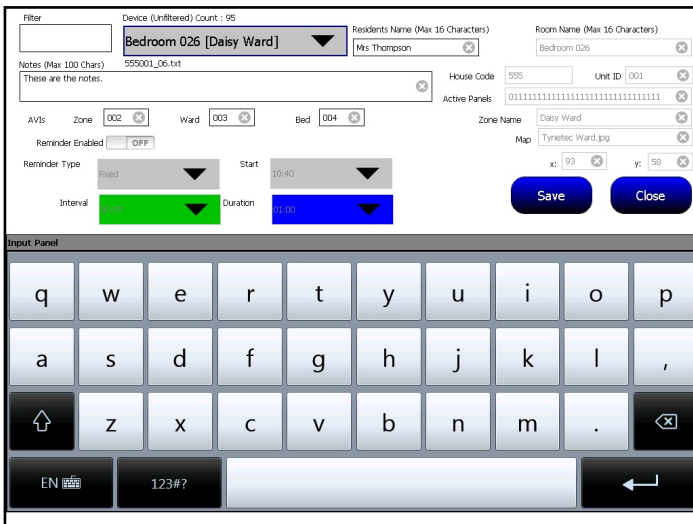
Press **OK** and the screen will change back to the Add ATX screen now showing the data just entered.

Repeat the above for all Zones.

Press the **Close** button to exit.

If you are setting-up a single AVI or need to add the Bed AVI's select the **EDIT DETAILS** option from the Engineers menu...

EDIT DETAILS



Select the **Device** to edit from the pull-down box (or type its ID in the **Filter** box).

*Note the **Zone** and **Ward** AVI ID's may already be entered from the Add Zone option above.*

Enter the ID's of the **Zone/Ward/Bed** AVI's you want to operate with this call point.

Touch **Save** when done then **Close** to exit.

9. FOLLOW ME AVI CONFIGURATION

To give greater flexibility and allow more than 3 AVI's to be configured the "Follow Me" lights feature has been added in the Touchsafe Pro panel software V2.00a onwards. To use this feature all AVI's fitted on the scheme must also have V2.00a firmware onwards.

IMPORTANT: if this feature is being used the **Bed AVI ID** must still be set in the **Edit Details** page. The Zone and Ward AVI ID's should be left at 000 or blank in the Edit Details page.

Go to the Touchsafe Pro Master Panel (ID 1), Logon as an Engineer and select the **PANEL DETAILS** option...

PANEL DETAILS

Set the **Use Follow Me Lights** switch ON.

Remember the AVI's must have V2.00a firmware onwards for the Follow Me option.

Set the **Run AVI's Silent** switch ON if you don't want the AVI beepers to sound.

Press the **Save** button then **Close** to exit.

The 2 switches for **Common Cardiac Relay** and **Common Emergency Relay** are also set on this page. See section 10 for details.

Now select the **FOLLOW ME** option from the Engineers menu...

FOLLOW ME

This shows an array of check boxes representing the AVI ID's 001 to 128.

Select a Call Point from the **Device** pull-down list.

Select the Alarm Type from the pull-down list if you want to set a different group of AVI's for a specific alarm type, e.g. you may not want any AVI's to illuminate for Nurse Present.

Note "ALL" is selected here. In the event of an alarm and no specific set of AVI's are set for the alarm type e.g. Cardiac, the "ALL" AVI's will be triggered.

Tick the **001-128** check boxes for the AVI ID's you want to activate for the selected Call Point and Alarm Type then press **Save**.

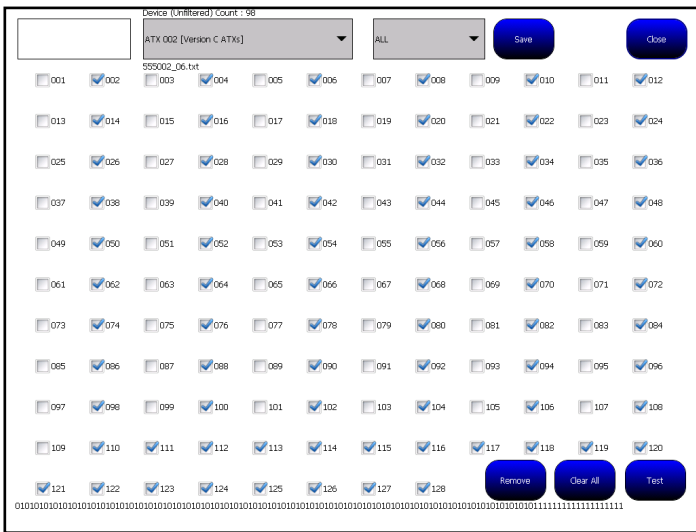
Remember the Bed AVI ID must NOT be included in this array of check boxes – this is set in the Edit Details page.

The **Remove** button can be used to remove any previously configured AVI's for any Event. This would result in that Event using the "ALL" settings (assuming that they have been configured).

IMPORTANT: do not press the **Save** button after removing a set of Follow Me lights otherwise a set of all zero's will be saved to that event and no AVI's will trigger for that event type.

9. FOLLOW ME AVI CONFIGURATION

At the bottom of the screen the configuration for the selected Device and Alarm Type is shown as a string of 1's and 0's...

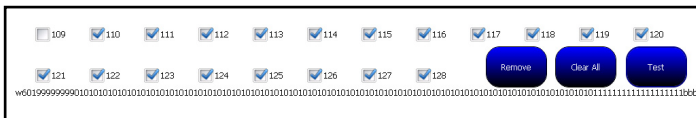


If any given event has been set to show no Follow Me AVI's (such as Nurse Present) the characters will be all 0's.

This confirms that it has been configured as all 0's as opposed to having not been configured.

If a Device has not been configured then the string of 1's and 0's will not be displayed at all along the bottom of the screen.

The Follow Me lights also allow an Engineer to test the AVI's in order to locate them on site. Once the check boxes are ticked, pressing the **Test** button will activate the selected AVI's and they will illuminate **PURPLE** – the AVI's are silent in Test Mode.



Note the string at the bottom of the screen has changed and now represents the actual data packet that is transmitted to the AVI's during test mode.

Press the **Clear All** button followed by the **Test** button to stop the Test Mode (it will also stop if the **Close** button is pressed).

Press the **Save** button once the AVI's are set for each of the Device/Alarm Types.

10. COMMON CARDIAC/EMERGENCY

With V2.00a firmware in the AVI (and V2.00a software in the Panel) it is possible to activate 2 relay outputs in the panel and 2 AVI's for a common Cardiac or common Emergency alarm.

Go to the Touchsafe Pro Master Panel (ID 1), Logon as an Engineer and select the **PANEL DETAILS** option. *An image of the Panel Details screen is shown on page 12 of this manual.*

Set the **Common Cardiac Relay** switch ON to activate Relay 2 in the Panel and any AVI with ID 255.

Set the **Common Emergency Relay** switch ON to activate Relay 1 in the Panel and any AVI with ID 254.

Press the **Save** button then **Close** to exit.

Set the common AVI ID's as below;

DIL Switch No.	1	2	3	4	5	6	7	8
Binary Code	1	2	4	8	16	32	64	128
ID 254	OFF	ON	ON	ON	ON	ON	ON	ON
ID 255	ON	ON	ON	ON	ON	ON	ON	ON

11. PSU BATTERY REPLACEMENT

The boxed 12V 3A power supply kit (Aidcall Part No. E40121) comes complete with a 2 metre mains flex and a 12V 7Ah rechargeable battery. Up to 30 AVI's can be connected per PSU therefore there may be more than one per site. Each PSU includes a rechargeable battery that will maintain normal system operation for several hours in the event of a mains power failure.



12V 7Ah Lead Acid
Rechargeable Battery

PSU dimensions: 250x220x85mm (HxWxD)

The rechargeable battery should be removed and tested by a Service Engineer on an annual basis and replaced every 5 years.

With the battery disconnected; check the charge voltage across the battery leads is 13.75V DC and re-adjust if necessary.

If the battery shows any signs of damage, swelling or leakage during an annual inspection it should be replaced immediately.

Only replace with the Manufacturers Approved battery type:

Yuasa NP7-12: 12V 7Ah Sealed Lead Acid Rechargeable Battery

Replacement batteries are available from Aidcall; order Part No. F00622

IMPORTANT: always mark the battery with the date it was replaced for reference on future Service visits.



See section 3 of this manual for Regulations regarding the safe disposal of used batteries.

12. SPECIFICATION

Safety	Compliance to EN 60950-1:2006+A12:2011
EMC	Compliance to EMC 2004/108/EC
Materials	Compliance to EU Directive RoHS 2011/65/EU
Design	Compliance to Department of Health's guidelines HTM 08-03
Red/Green/Blue LED's	5 No. High Power Super Flux
White LED's	4 No. High Power Super Flux
Piezo Sounder	3700Hz Single Tone 90dB @ 30cm
Nurse Call	Amber Light, Sounder 1 second ON - 3 seconds OFF
Assistance Call	Yellow Light, Sounder 1 second ON - 1 second OFF
Emergency Call	Red Light, Sounder 0.25 seconds ON – 0.25 seconds OFF
Cardiac Call	Blue, Sounder 0.25 seconds ON – 0.25 seconds OFF
Nurse Present	Green, Silent
Follow Me Test Mode	Purple, Silent
Data Connection	RS485 (115200 Baud)
No. of Unique ID's	128
Max No. AVI's Per Site	255 (assuming duplicated ID's and no TCR's connected)
8 Way DIL Switch	Switches 1 to 7 = Unit ID, Switch 8 not used
Jumper LK1	Default ON = Sounder On (OFF = Sounder Off)
Jumper LK2	Not Used
Base Pattress Material	ABS (White RAL 9003)
Main Body Material	ABS (White RAL 9003)
Lens Cap Material	Polycarbonate PC 122U (Translucent)
Flammability Rating	UL 94 V-0
Ingress Protection Rating	IP20
Power Requirement	12V DC 100mA active (20mA standby)
Dimensions	79mm x 95mm x 92mm (LxWxD)
Weight	164 grams
Relative Humidity	Non-condensing
Operating Humidity Range	10% to 90% RH
Operating Temperature Range	0°C to 50°C
Storage Temperature Range	-20°C to 60°C