INDUCTION LOOP GUIDE

INDUCTION LOOP GUIDE EN-UK
V.1.1
19/10/16

WE RECOMMEND
This equipment be installed by a Competent Electrician, Security Installation or Communications Engineer.

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INTRODUCTION

This guide is intended to give an introduction to the 4K series and VR4K series Induction Loop module and show how to connect the Induction Loop to any of the following 4K series, VR4K series and other VR digital speaker modules:

Audio 4K Series Speaker Modules

Art.4836, Art.4837, Art.4838, Art.4203, Art.4810N/4810 *(GSM speaker), 4K digital (4202 series) including the Art.4212 digital series.*

Audio & Video 4K Series Speaker & Camera Modules

Art.4833, Art.4832 and Art.4283.

Audio VR4K & VR Series Speaker Modules

VR4KAM *(136 speaker)*, VR4KAM2W *(138N speaker)*, VR4KAMK *(140 speaker)*, VR4KGSM *(150 GSM speaker)* and VR digital 2202-1-pcb's.

To meet DDA requirements and the Equality Act.2010 the Induction Loop module can connect to Videx 4000 series audio amplifier modules *(both the standard 4K series and VR4K series as listed above)* to enable users with a hearing aid set to the 'T' position to hear the conversation from the intercom panel.

USER OPERATION

The end user must set their hearing aid to the 'T' position.

ART.4846/IND MODULE

The Art.4846/IND module comprises of an IL-EL42-2 Induction Coil fitted to a transparent polycarbonate cover window with side clips for fixing into the 4K series range of front support frames. It has a mirror finish stainless steel front plate *(standard 4K version)* with a central window *(size 83x103mm)*.

The Art.4846/IND module box contains the following:

- A copy of this Induction Loop Guide.
- 4K panel care leaflet.
- Induction Loop Pack.
- Adhesive gasket.

VR4KIND MODULE

The VR4KIND module comprises of an IL-EL42-2 Induction Coil which is mounted to a transparent polycarbonate cover window. It is fitted to a brushed 2.5mm *(12SWG)* stainless steel VR4K series front plate with a central window *(size 52x85mm)* and comes with two frame mounting brackets to fit into the 4K series range of front support frames.

The Art.VR4KIND module box contains the following:

- A copy of this Induction Loop Guide.
- VR panel care leaflet.
- Induction Loop Pack.
- 2x frame mounting brackets, 4xM3 fixing screws.

INDUCTION LOOP PACK

The Induction Loop pack should contain the following parts:

- 12Vdc power cable.
- Red/Blue 4mm male bullet connector Induction Loop cable.
- Red/Blue 4mm female bullet connector Speaker cable.
- 2x Scotchlok™ 3 way butt connector.

MOUNTING TO 4K SERIES FRONT SUPPORT FRAME

Art.4846/IND

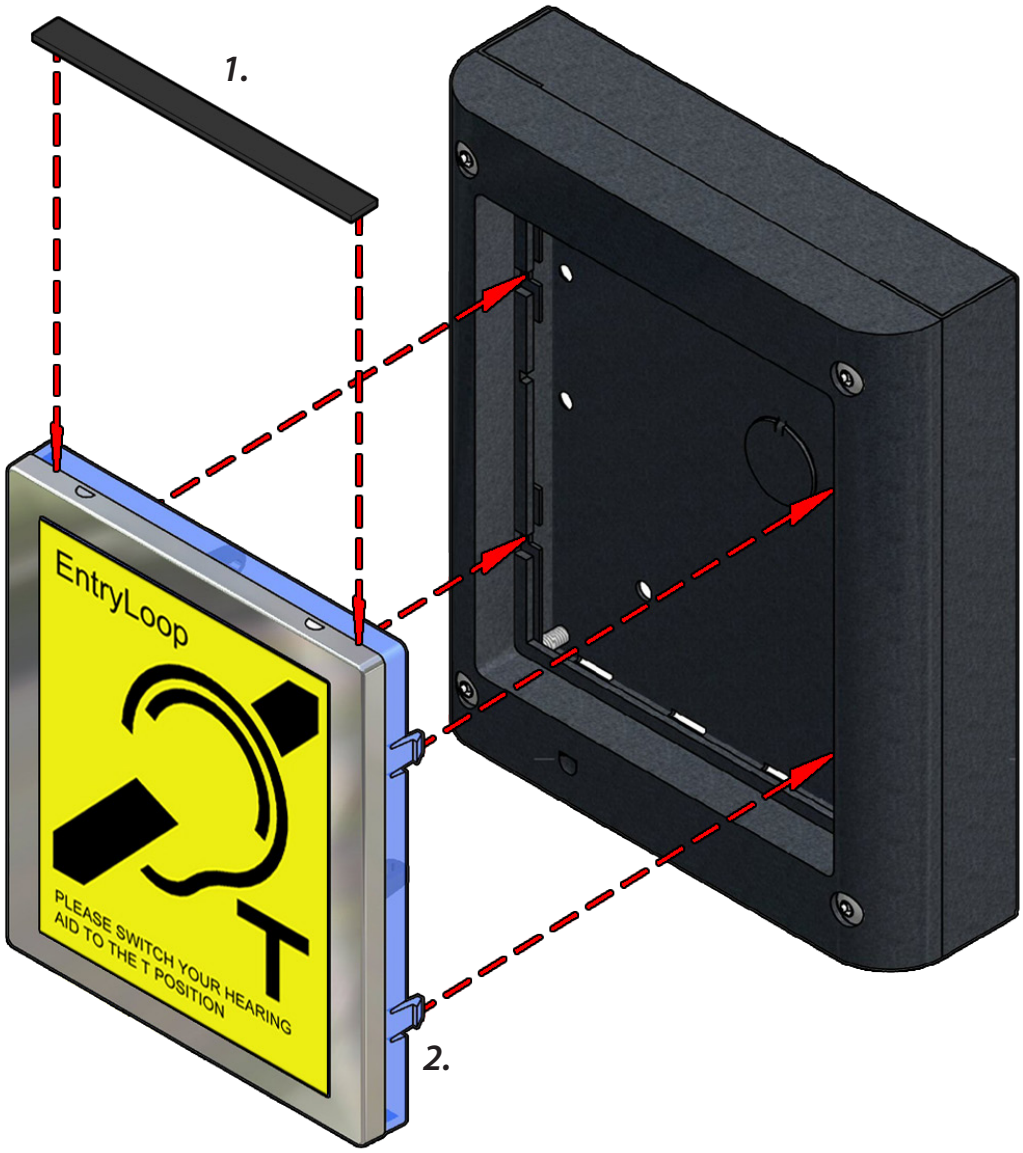


Fig.A

1. Remove thin film from adhesive gasket and fit as shown in Fig.A.
2. Clip Art.4846/IND induction loop module into front support frame as shown in Fig.A.

VR4KIND

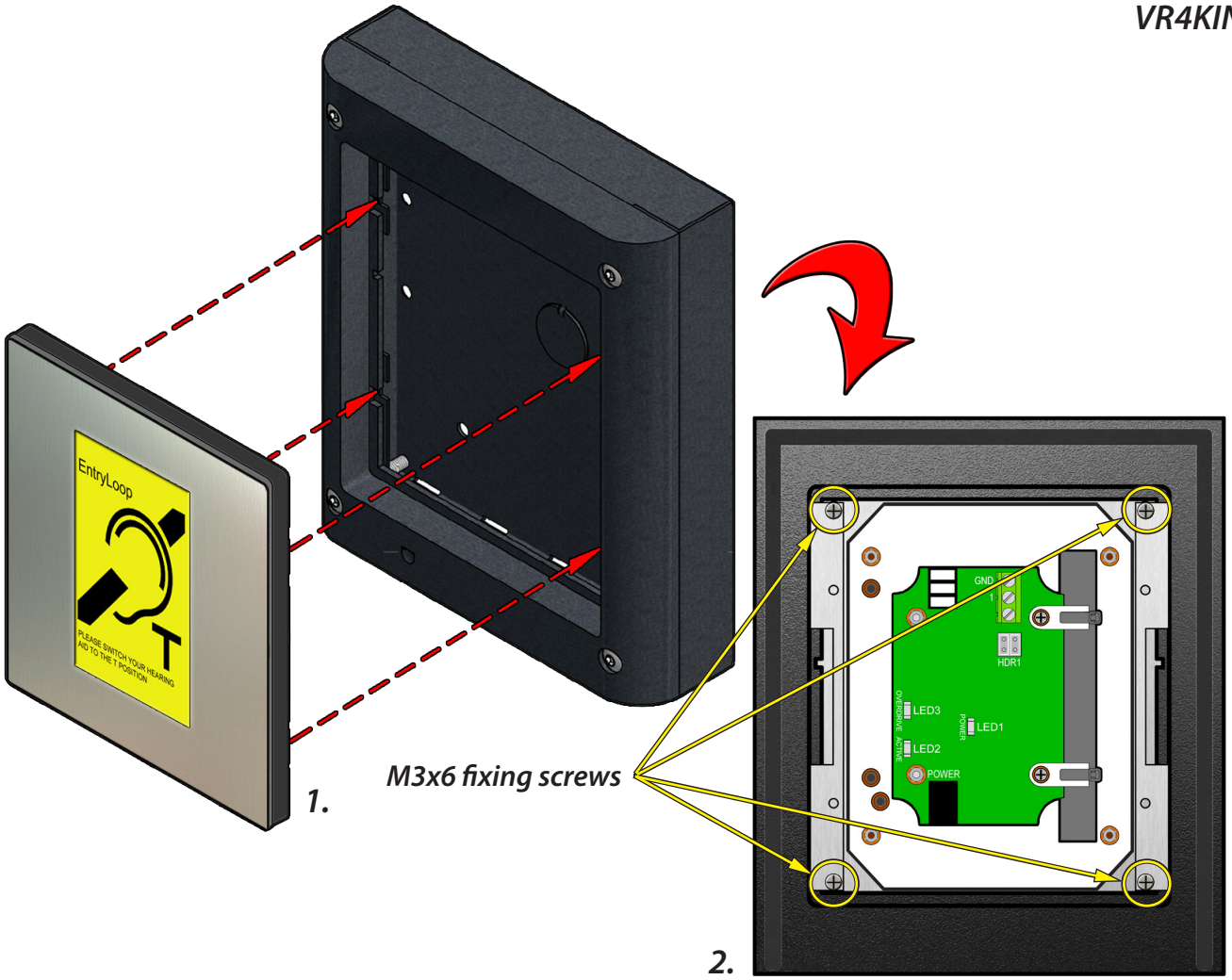


Fig.B

1. Fit VR4KIND module as shown in Fig.B.
2. Use the M3x6 fixing screws to fix the frame mounting brackets as shown in Fig.B.

TECHNICAL SPECIFICATION

It is important that the Induction Loop module *(both the 4846/IND and VR4KIND)* is powered by a separate12Vdc *(3A)* power supply.

Supply Voltage:	12V-14Vdc.
Quiescent Current:	50mA.
Operating Current:	2A *(minimum)*.
LED1:	Power indication LED shows the device is powered ON.
LED2:	Active LED shows the device is operating correctly.
LED3:	Overdrive LED indicates the audio signal of the device.

CONNECTING TO A 4K SERIES SPEAKER MODULE

In the following example an Art.4836 speaker is used. The instructions below can be followed when fitting the Induction Loop to any of the 4K series speaker *(and camera)* modules including the digital Art.4202 series and Art.4212 series speakers as described on page 3.

1. First ensure that any power connections are disconnected from the 4K series speaker module and disconnect any other wires from the speaker terminals.

2. If it hasn't already been done, remove the 4K series speaker module from the front support frame.

3. Unclip the front metal speaker fascia from the module's back plastic, as shown in Fig.1.

4. Take a pair of wire cutters and cut the Red and Blue speaker wires, as shown in Fig.2.

5. Unscrew the pcb screw in the middle of the speaker pcb in order to manoeuvre the pcb inside the back plastic *(**do not** remove the pcb)*, refer to Fig.2.

6. Take the Red/Blue female connector cable and feed it through the underside of the speaker pcb, coming in from the right hand side of the speaker terminals *(the ends of the Red and Blue wires will eventually come out at the top end of the pcb)* as shown in Fig.3.

7. Take one of the Scotchlok™ 3 way butt connectors with the transparent side facing up.

8. Next take the Red wires from the speaker and the speaker pcb and the red wire from the Red/Blue female connector cable. Feed each wire, in turn, into one of the connector barrels on the Scotchlok™ 3 way butt connector, as shown in Fig.4. *(When feeding the red wires into the Scotchlok™ 3 way butt connector they should be pushed all the way to the end of the connector as far as they will go, this can be seen through the transparent side of the connector).*

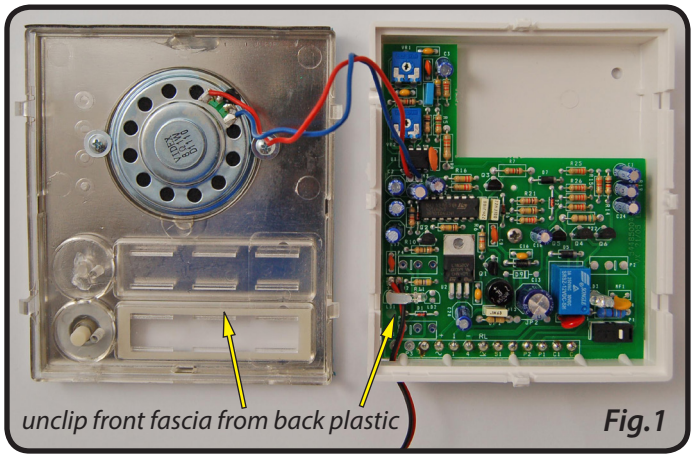


Fig.1

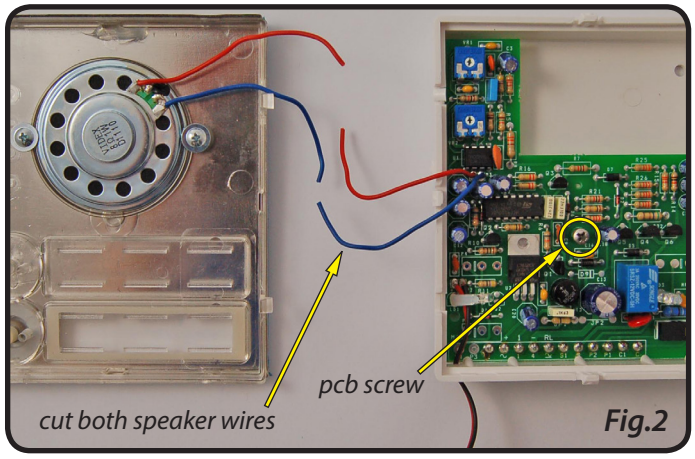


Fig.2

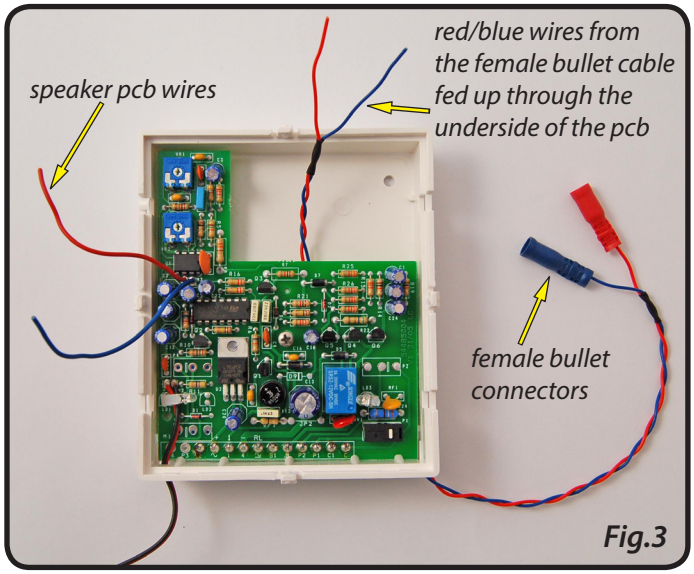


Fig.3

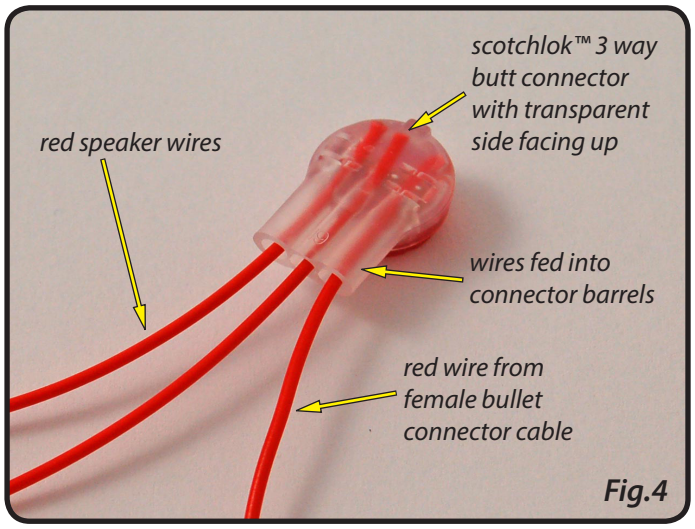


Fig.4

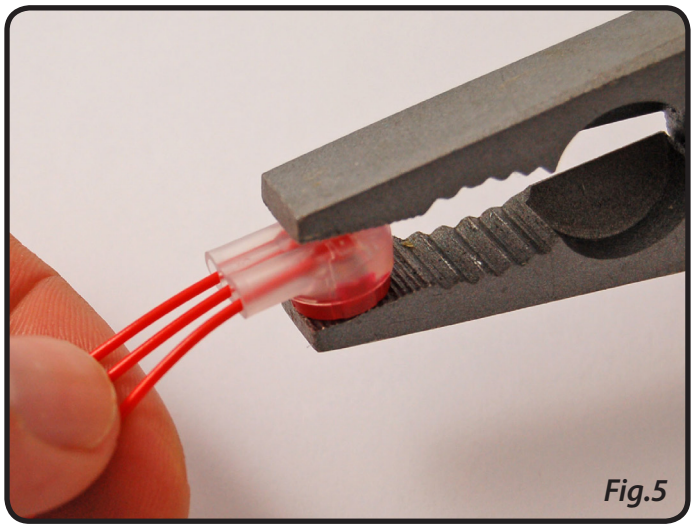


Fig.5

9. Once the three Red wires are in position use a pair of pliers and place them over the red cap of the butt connector and transparent side and apply pressure to crimp the wires into place, as shown in Fig.5. *(When crimping the wires into the butt connector check that the wires are firmly held in position and do not slip out of the barrels).*

10. Repeat steps 6 - 9 with the Blue speaker wires and the Blue female bullet wire.

11. Once both butt connectors have been crimped tighten up the pcb screw to secure the speaker pcb back onto the back plastic. Replace the wire assembly back into the back plastic as well, as shown in Fig.6. *(There is enough room between the speaker pcb and the front metal fascia to accommodate the wires. When fitting to a 4K series camera module care should be taken when manoeuvring the wire assembly to avoid obstructing the camera lens).*

12. Finally clip the front metal fascia back onto the back plastic. The Red/Blue female connector cable should now be trailing out of the bottom corner of the 4K speaker module, as shown in Fig.7.

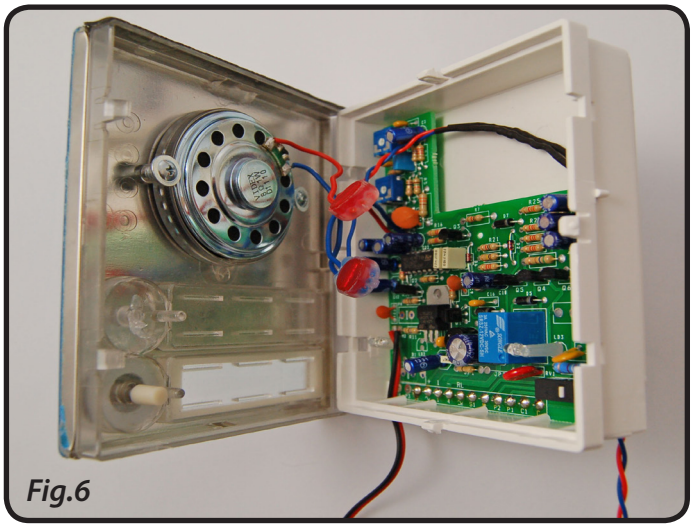


Fig.6

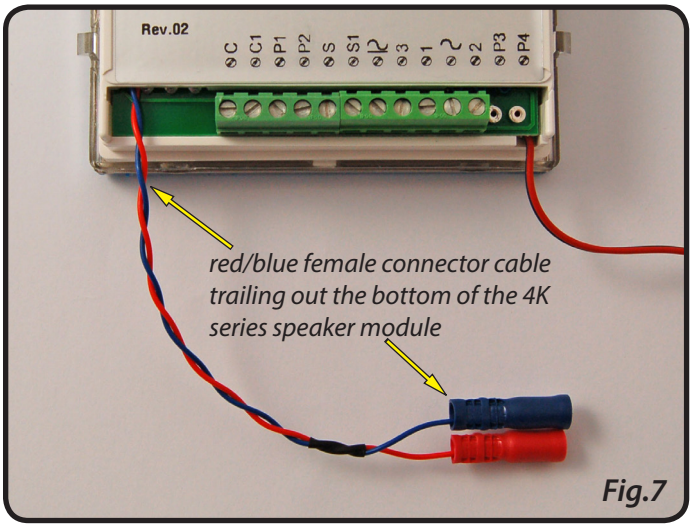


Fig.7

13. Next take the 12Vdc power cable and plug it into the power plug-in terminal at the bottom of the Induction Loop, as shown in Fig.8.

14. Next take the Red/Blue male connector cable and connect it into the terminal block at the top of the Induction Loop *(the Red wire connects into the +pos termnial and the Blue wire connects into the GND terminal)* and remove both HDR1 jumpers, as shown in Fig.9.

15. Finally clip the Red male/female connectors and the Blue male/female connectors together as shown in Fig.10.

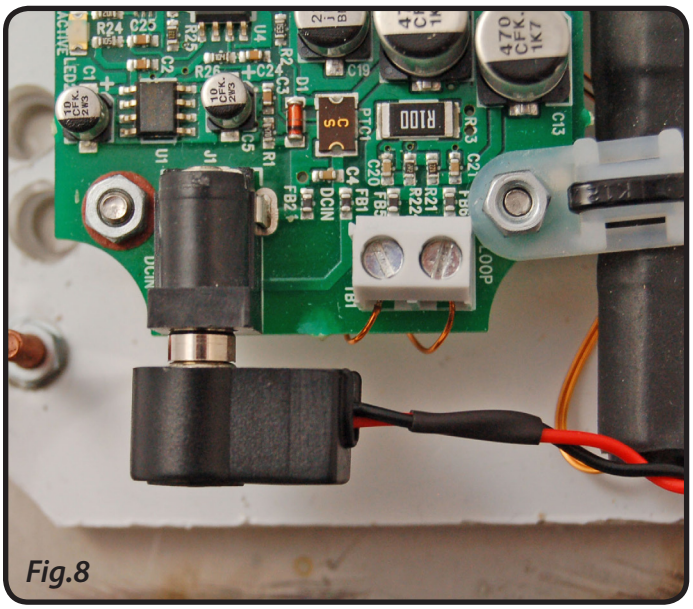


Fig.8

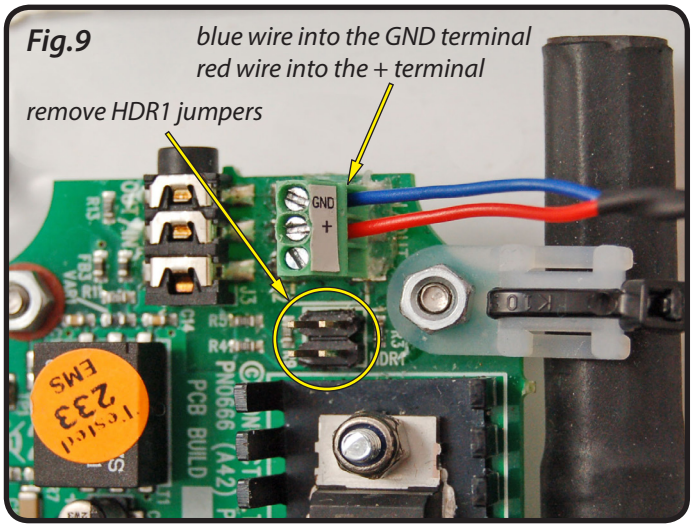
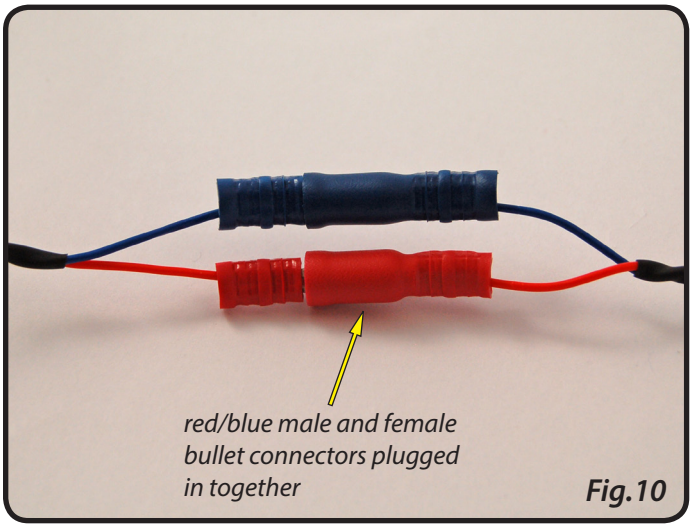


Fig.9
blue wire into the GND terminal
red wire into the + terminal
remove HDR1 jumpers


red/blue male and female bullet connectors plugged in together
Fig.10

CONNECTING TO A VR4K SERIES SPEAKER MODULE

In the following example a VR4KAM 136 speaker is used. The instructions below can be followed when fitting the Induction Loop to any VR series speaker module/pcb including the digital 2202-1-pcb as described on page 3.

1. First ensure that any power connections are disconnected from the VR4K series speaker module and disconnect any other wires from the speaker terminals.

2. Unscrew and remove the four M3x12 fixing screws from the VR4KAM speaker module, as shown in Fig.11.

3. Remove the top covering, as shown in Fig.12, and remove the pcb and front speaker plastic from the panel plate.

4. Take a pair of wire cutters and cut the Red and Blue speaker wires *(approximately half way)*, as shown in Fig.13.

5. Take one of the Scotchlok™ 3 way butt connectors with the transparent side facing up.

6. Next take the Red wires from the speaker and the speaker pcb and the red wire from the Red/Blue female connector cable. Feed each wire, in turn, into one of the connector barrels on the Scotchlok™ 3 way butt connector, as shown in Fig.14. *(When feeding the red wires into the Scotchlok™ 3 way butt connector they should be pushed all the way to the end of the connector as far as they will go, this can be seen through the transparent side of the connector).*

7. Once the three Red wires are in position use a pair of pliers and place them over the red cap of the butt connector and transparent side and apply pressure to crimp the wires into place, as shown in Fig.15. *(When crimping the wires into the butt connector check that the wires are firmly held in position and do not slip out of the barrels).*

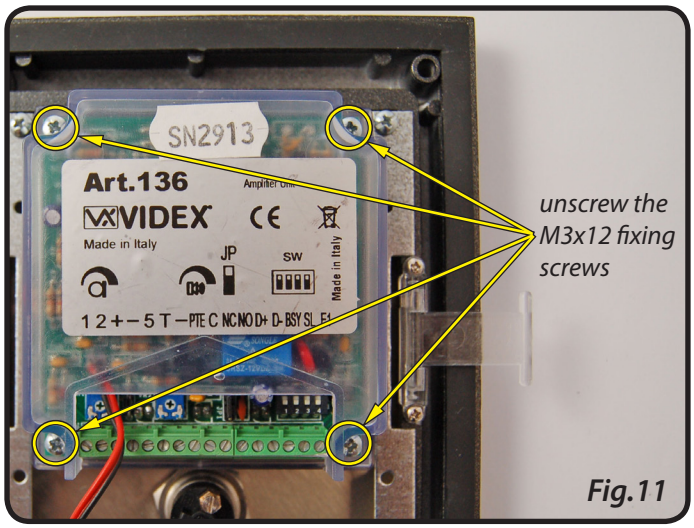


Fig.11

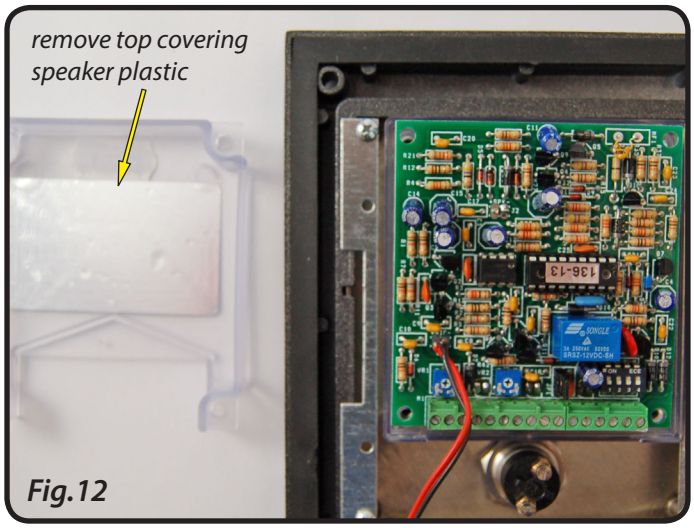


Fig.12

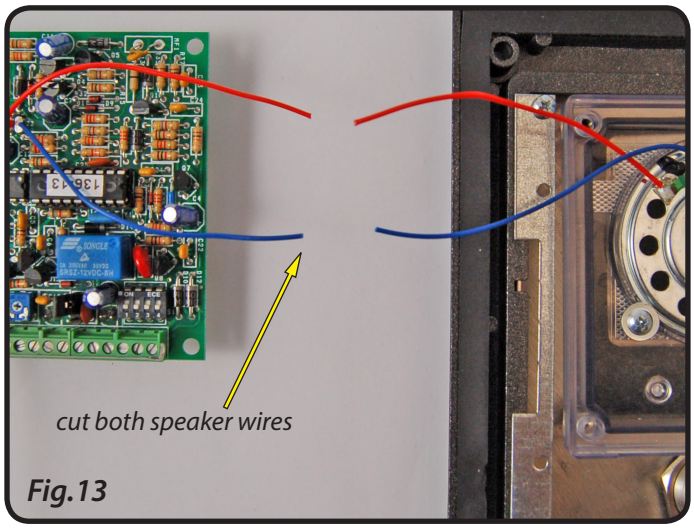


Fig.13

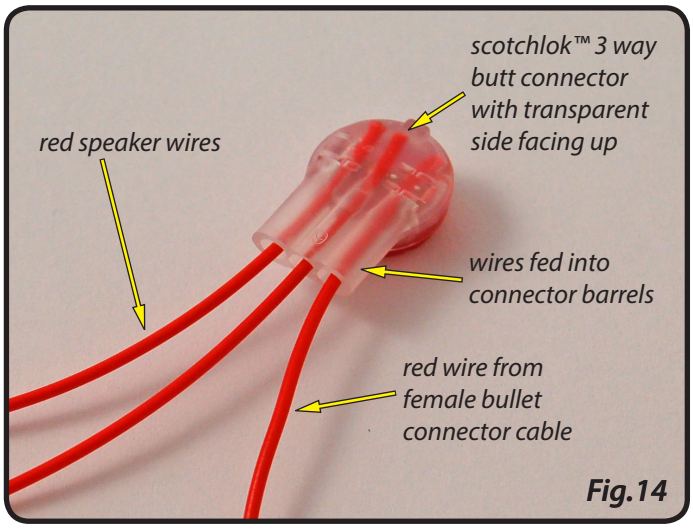


Fig.14

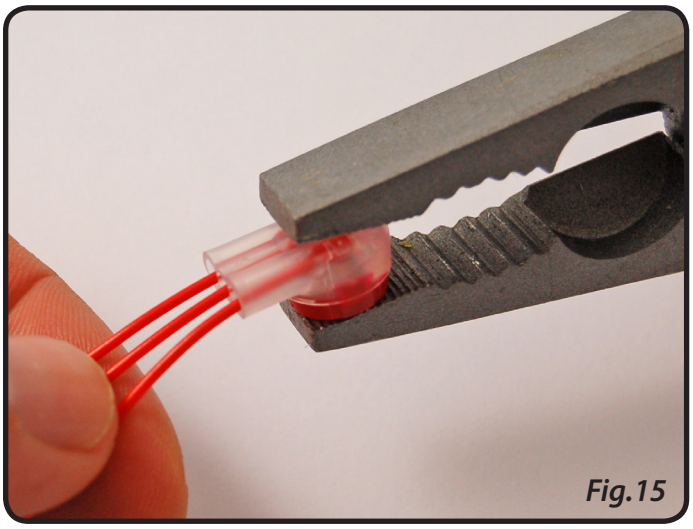


Fig.15

8. Repeat steps 6 - 7 with the Blue speaker wires and the Blue female bullet wire.

9. Once both butt connectors have been crimped replace the wire assembly back into the front plastic, as shown in Fig.16.

10. Fold the Red/Blue female connector cable over the top side of the speaker pcb so that when the speaker pcb sits in position on the front speaker plastic the Red/Blue connector cable runs from the top of the speaker pcb down along the top side of the pcb, as shown in Fig.17.

11. Replace the top covering speaker plastic and fit the four M3x12 fixing screws and tighten firmly into place, as shown in Fig.18.

12. After the top covering speaker plastic has been fitted back into position the Red/Blue female connector cable should be trailing out from the gap of the top covering plastic just above the terminal connections, as shown in Fig.19.

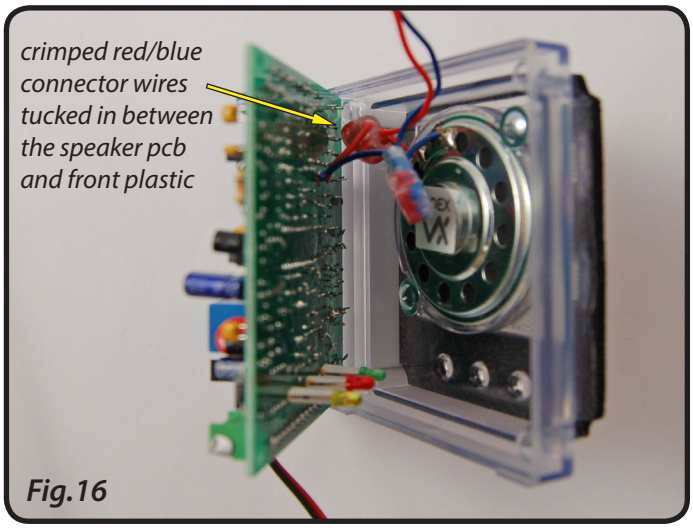


Fig.16

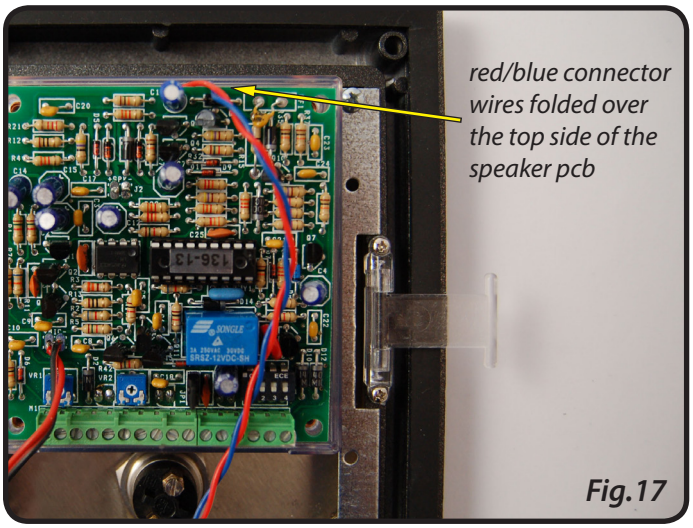


Fig.17

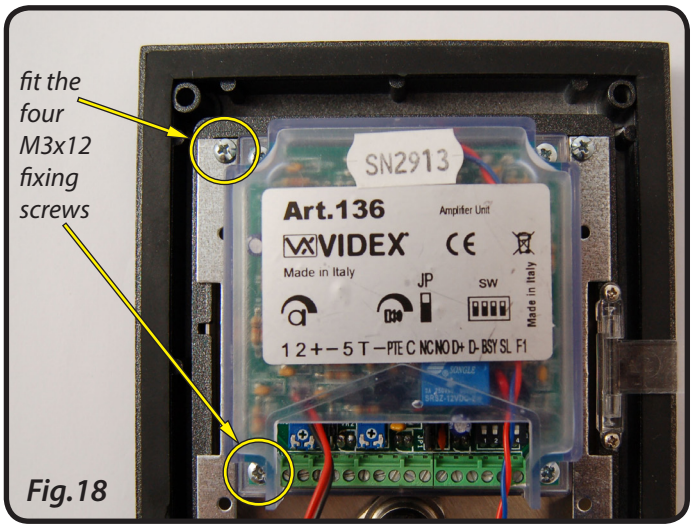


Fig.18

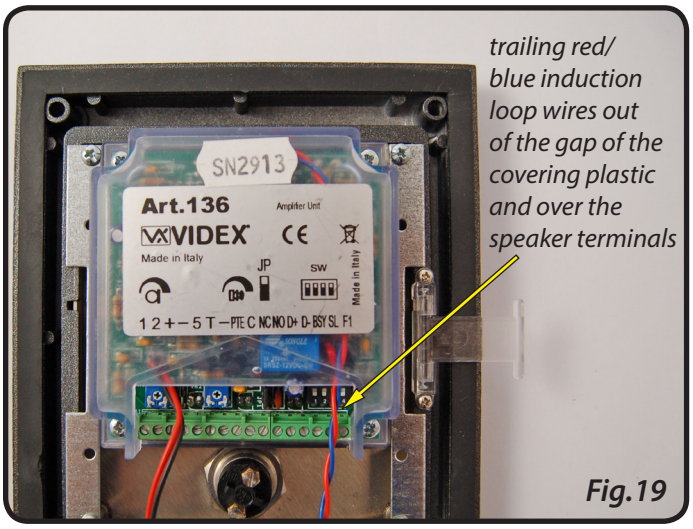


Fig.19

13. Next take the 12Vdc power cable and plug it into the power plug-in terminal at the bottom of the Induction Loop, as shown in Fig.20.

14. Next take the Red/Blue male connector cable and connect it into the terminal block at the top of the Induction Loop *(the Red wire connects into the +pos termnial and the Blue wire connects into the GND terminal)* and remove both HDR1 jumpers, as shown in Fig.21.

15. Finally clip the Red male/female connectors and the Blue male/female connectors together as shown in Fig.22.

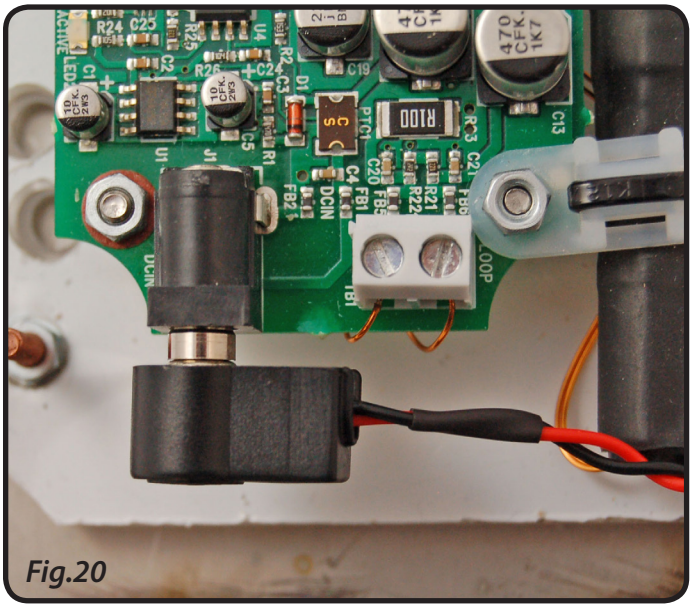
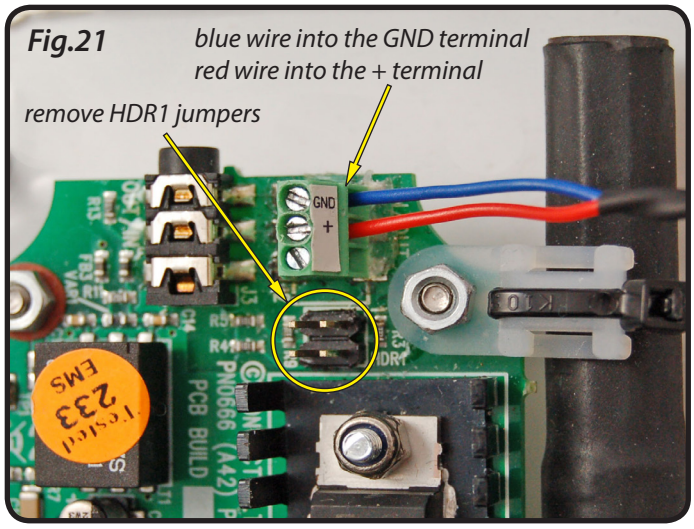


Fig.20



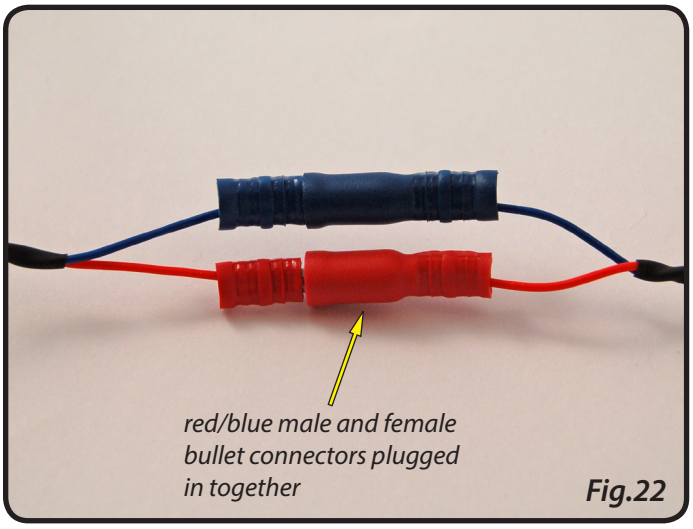


Fig.22

WIRING DIAGRAM

Fig.23 below shows the wiring connections from the Induction Loop pcb to any of the speaker modules as listed on page 3.

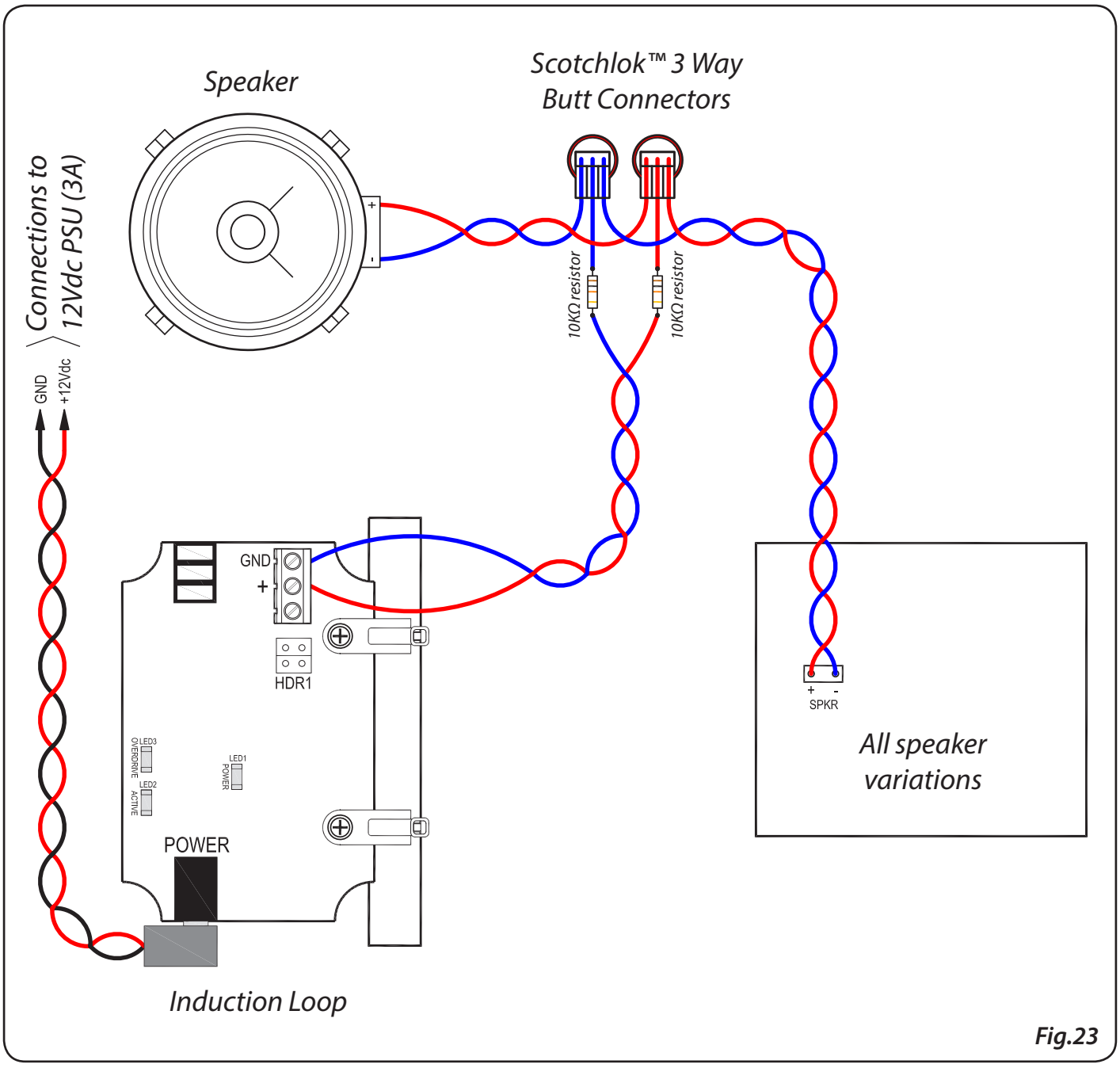


Fig.23

INDUCTION LOOP OPERATION

The Induction Loop has been designed to be left unattended once it has been correctly installed and powered ON.

Fig.24 shows the onboard LED indicators:

LED1 - POWER: If this LED is constantly lit *(red)* then this indicates there is 12Vdc power to the Induction Loop.

LED2 - ACTIVE: If the induction loop is being driven correctly then this LED will illuminate *(green)* to indicate that a steady signal is passing through.

LED3 - OVERDRIVE: If the audio signal level increases through the induction loop this LED will start to illuminate red and get brighter in intensity. If it shows a continuous red then the drive level is too high and audio distortion will occur.

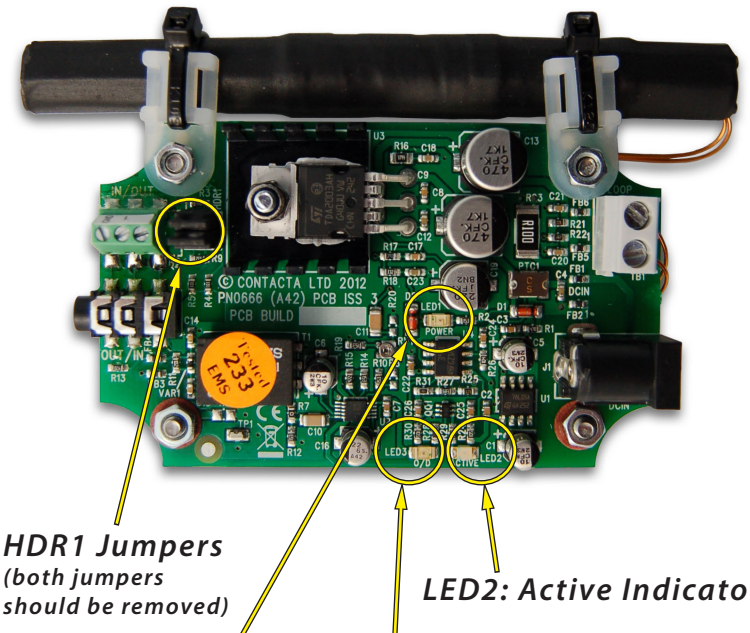


Fig.24

TROUBLESHOOTING

SYMPTOM	POSSIBLE FAULT	ACTION
LED1 OFF	PSU disconnected or failed	Investigate power supply
LED1 ON, Other LEDs OFF	No audio input	Investigate audio connection
LED1 ON LED2 flickering or steady LED3 OFF or occasionally flickers	Correct operation, although audio input could be low	Increase audio level if possible, try turning up speaker POT on audio amplifier
LED1 ON LED2 flickers or steady LED3 flickers regularly	Normal operation	No action required
LED1 ON LED2 steady LED3 continuously ON	Excessive audio input. Danger of distortion or overheating	Reduce audio level, try turning down speaker POT on audio amplifier
LED1 ON LED2 OFF LED3 continuously ON	Induction Loop disconnected, open circuit or incorrect specification	Investigate Induction Loop and its connections, check connected to audio amplifier correctly
Interference (buzzing, whistling or hissing) is heard through Induction Loop	Unscreened or poorly earthed 3rd party equipment is being used or in close proximity, incorrect PSU being used	Switch off 3rd party equipment to identify the source of interference

TESTING THE INDUCTION LOOP

After the Induction Loop has been installed it can be tested using the Contacta audio Induction Loop receiver *(part no. IL-RX20)* or an equivalent 3rd party audio induction loop receiver.

This test equipment allows the engineer to listen to an audio frequency Induction Loop system using a standard pair of stereo headphones. It has a vertically mounted pick up coil to emulate the performance of a hearing aid switched to the 'T' *(telecoil)* position.

USING AN INDUCTION LOOP RECEIVER

While the steps below describe how to use the Contacta IL-RX20 receiver the same steps can be used as a guide when using a 3rd party induction loop receiver. If any problems arise when testing the troubleshooting guide *(on page 13)* can also be used to help determine where the fault lies.

1. Ensure the Induction Loop has been connected up correctly to the relevant speaker module.

2. Connect 12Vdc power to the induction loop.

3. Plug the headphones in the jack connection at the top of the IL-RX20 receiver, as shown in Fig.25, and place the headphones over both ears.

4. Slowly turn the volume control clockwise until you hear a 'click' and the green indication LED comes ON, as shown in Fig.26 *(the receiver's LED will stay illuminted while in the ON position. To maximize battery life it is recommended that the receiver is switched OFF when not in use)*.

5. The receiver must be positioned in a vertical/ upright position and held in close proximity to the induction loop when testing, as shown in Fig.27 *(do not hold the receiver flat)*.

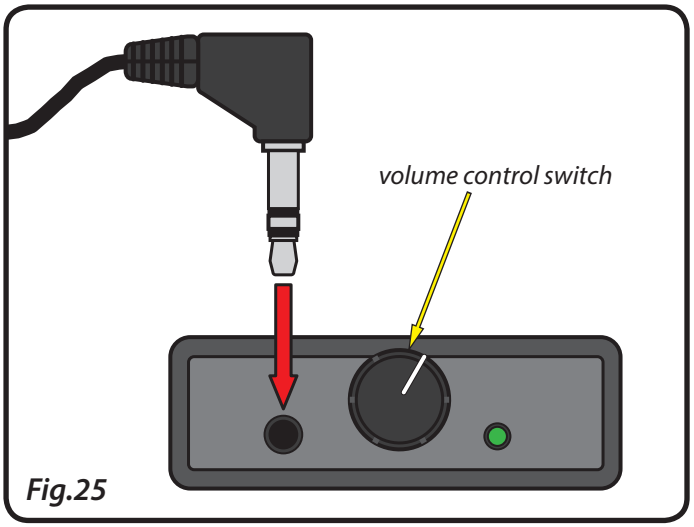


Fig.25

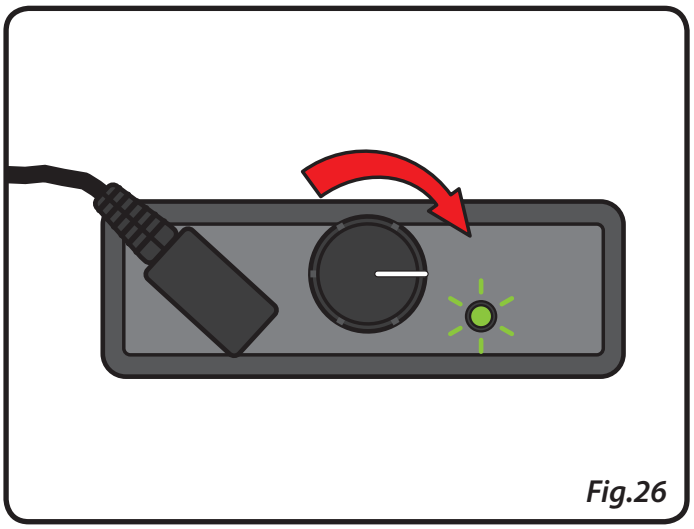
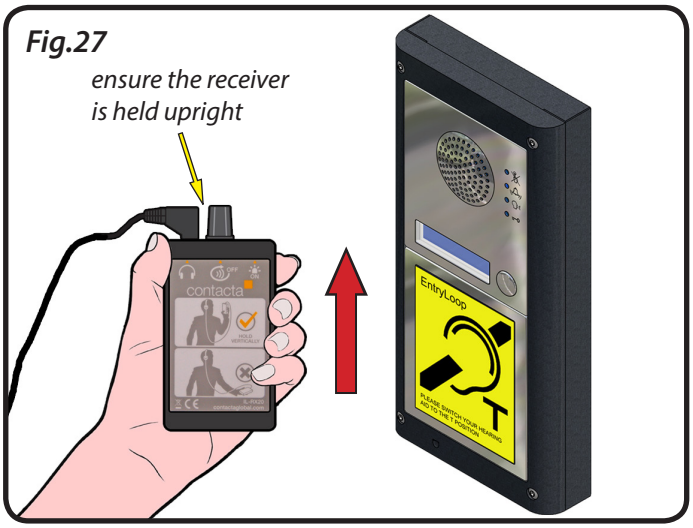


Fig.26

6. Place a test call from the intercom panel to the internal intercom phone.

7. When the handset on the intercom phone is answered check that there is clear speech coming through the audio receiver headphones *(if required adjust the volume control to set the speech volume to an acceptable level)*.

8. When finished switch OFF the IL-RX20 receiver.



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