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CENTURION

INTERCOM HANDSET

INTERCOM HANDSET
INSTALLATION MANUAL

AUDIO INTERCOM SYSTEMS

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1. Introduction

The **INTERCOM HANDSET** is a very versatile intercom system designed for a multitude of applications ranging from a basic 1 to 1 kit to larger installations with up to five components in the system. A component is either an entry panel or a handset as detailed below.

Expandability

The **INTERCOM HANDSET** can be configured using combinations of up to five components as follows:

- Up to two entry panels
- Two groups of handsets with up to three handsets per group
- The system can operate without an entry panel connected

Each call button rings one or both of the groups of handsets, depending on the mode set. Intercommunication is available between the two groups of handsets.

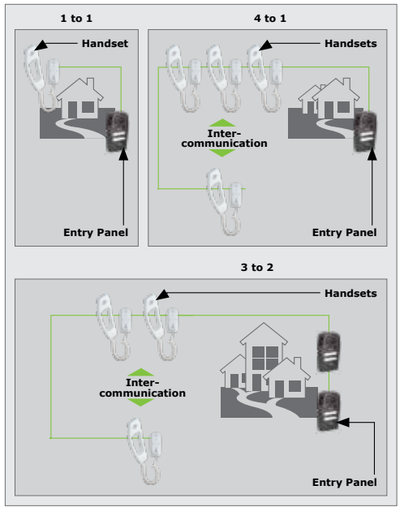


FIGURE 1. EXPANDABILITY

Wiring

The system uses a two wire bus to link all the components, making the wiring of the system particularly easy.

Powering the system

The **INTERCOM HANDSET** operates off a DC supply and can therefore be powered from either a 14V DC mains adaptor or directly from the battery supply of a 12V gate motor system. The power source can be connected to any component in the system.

Operation

When setting up the system the handsets can be split into two groups. Intercommunication can only occur between these groups.

When the call button(s) at an entry panel is pressed it will ring the handset(s) linked to the specific handset group.

The entry panel call buttons can be configured as:

- One-Button entry panel:
  - Top button (A) and bottom button (B) rings all handsets in the system
- Two-Button entry panel:
  - Top button (A) rings group "A" handsets
  - Bottom button (B) rings group "B" handsets
  - The factory default is a two-button entry panel.

In a system with two entry panels, a V2 entry panel will only work with a V3 entry panel that has been configured for two-button operation, not one-button operation. V3 entry panels are compatible in either one- or two- button mode.

In an installation with two entry panels the call tone will be different for each entry panel. There will be a simultaneous ring at the entry panel to confirm the ringing at the handset(s).

2. Important Safety Instructions

1. Do not install this product near DOSS sensor inside gate motor housing or near the remote receiver.
2. Do not install this product near any sensitive electrical components.
3. All installation, repair, and service work to this product must be done by a suitably-qualified person.
4. Do not in any way modify the components of the system.
5. Do not install the equipment in an explosive atmosphere: the presence of flammable gas or fumes is a serious danger to safety.
6. Do not leave packing materials (plastic, polystyrene, etc.) within reach of children as such materials are potential sources of danger.
7. Dispose of all waste products like packing materials, according to local regulations.
8. Centurion Systems (Pty) Ltd does not accept any liability caused by improper use of the product, or for use other than that for which the automated system was intended.
9. This product was designed and built strictly for the use indicated in this documentation. Any other use, not expressly indicated here, could compromise the service life/operation of the product and/or be a source of danger.
10. Anything not expressly specified in these instructions is not permitted.

This icon denotes variations and other aspects that should be considered during installation.

This icon indicates tips and other information that could be useful during the installation.

3. Specifications

3.1. Physical Dimentions

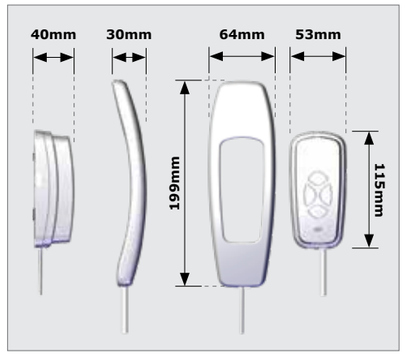


FIGURE 2. INTERCOM HANDSET

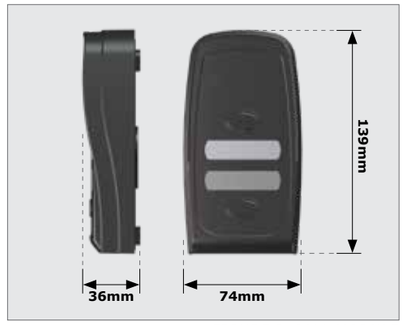


FIGURE 3. CALL MODULE

3.2. Technical Specifications

Supply Voltage Range	12-14V DC (14V DC if powering handset)[1]
Current Draw	
Quiescent	150mA (+/- 60mA for a 1:1 system)
Maximum	200mA
Speech Volume	Adjustable at each entry panel and handset
Wiring / Cabling	Two polarized wires for speech, call and gate/door lock release
Ring Tone	Electronic while button is depressed, with separate tones when calling from each entry panel in a system or between groups of handsets
Call Confirmation at Entry Panel	Yes
Wiring / Cabling Distance	Maximum 150m
Gate / Door Release	2A 12V AC/DC Potential-free normally-open contact at entry panel[2]
Handset Auxiliary Contact	Potential-free normally-open contact[3]
Handset Indicator Lens	LED terminals on PCB 470Ohm in-line resistor[4]
Entry Panel Illumination	Call buttons and labels backlit
Operating Temperature	-20°C to +50°C

TABLE 1

Humidity	0 to 90% non-condensing
IP Rating (Entry Panel)	IP56
Surge Protection	Yes

TABLE 1 - CONTINUED

1. Supplied from gate motor DC supply or separate 14V DC supply.
2. Door lock requires separate power supply wired in series with contact.
3. Requires separate wiring to two wire bus.
   Contact rating: 2A @ 12V DC/AC
4. Requires separate wiring to 2 wire bus

4. Product Identification

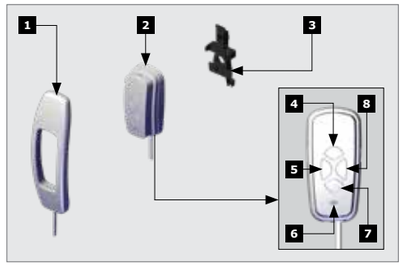


FIGURE 3. INTERCOM HANDSET

1. Intercom Handset
2. Cradle
3. Mounting Plate
4. Trigger Button 1
5. Auxillary Button[1]
6. Gate Status LED
7. Trigger Button 2
8. Ringer Button[2]

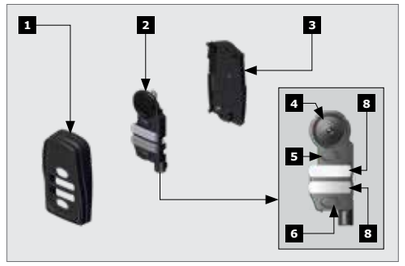


FIGURE 4. CALL MODULE

1. Front Fascia
2. Electronic Module
3. Back Plate
4. Front Speaker
5. Button 1[3]
6. Button 2[4]
7. Label 2
8. Label 1

1. Closes the auxiliary contacts on the terminal block on the underside of the Handset.
2. Rings the other Handset group.
3. Button "1" rings group "1" Handset(s) in a two-button configuration or all Handsets in a one-button configuration.
4. Button "2" rings group "2" Handset(s) in a two-button configuration or all Handsets in a one-button configuration.

5. Installation

5.1. Entry Panel Installation

5.1.1. Wall-mount Installation

Position entry panel on wall adjacent to entrance gate or door.

Mount at a height that allows for comfortably speaking into the microphone.

A recommended height is shown in Figure 5.

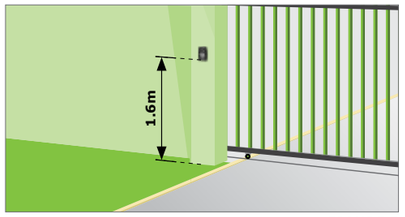


FIGURE 5

5.1.2. Gooseneck Installation

Alternatively mount the entry panel onto a gooseneck ensuring that:

- The entry panel does not protrude too far into the driveway
- The entry panel is not set too far back and can be easily accessed from a vehicle
- The height allows for comfortably speaking into the microphone

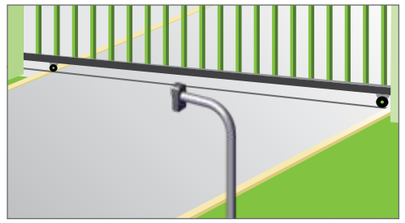


FIGURE 6

Dimensions of the Entry Panel Back Plate and Mounting Holes relative to the Entry Panel Cover are shown in Figure 7.

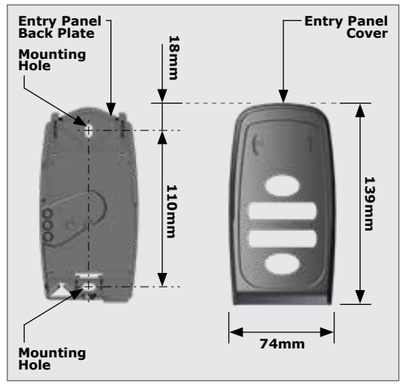


FIGURE 7

Lift the Front Fascia of the Entry Panel off.

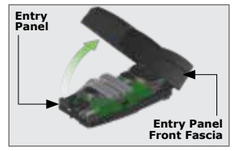


FIGURE 8

Insert a Flat Screwdriver into the groove as shown in Figure 9, and unclip the Electronic Module from Entry Panel Base Plate.

Then lift the Electronic Module off the Entry Panel Base Plate.

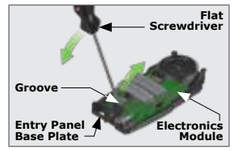


FIGURE 9

In the case of an uneven wall, the tabs may be cut as shown to allow the base to 'sit' on the wall without rocking.

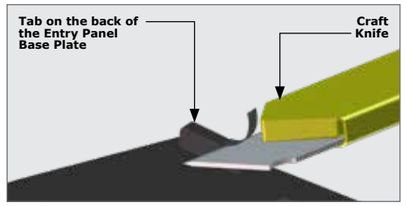


FIGURE 10

Hold the Entry Panel Base against the wall at the required height ensuring that it is vertical and mark the location of the mounting holes.

Using a 6mm masonry bit, drill holes into the wall for the rawlplugs provided in the kit.

If the cable is being routed into the unit from a concealed conduit behind the base, knock out one of the cable entry holes provided in the base and feed through the cable. Ensure that at least 100mm of cable extends out of the wall.

Fit the Sealing Washer onto the top mounting screw before installing.

Ensure that the Sealing Washer is fitted and covers the Mounting Hole to prevent water ingress.

Screw the base firmly into position and using the slots provided in the mounting holes, adjust the base to be perfectly vertical.

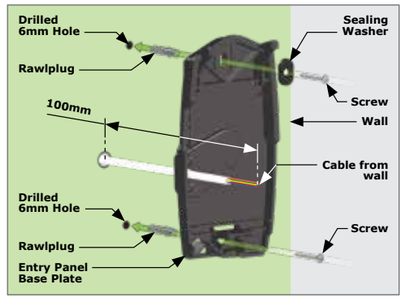


FIGURE 11

Hook the Electronics Module into the Entry Panel Base Plate as shown in Figure 12 and clip it back into position.

Terminate the Cable as shown in "Section 6 - Wiring Diagrams".

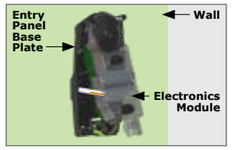


FIGURE 12

If the cable is surface mounted, route the cable into the unit from underneath as shown.

Terminate the Cable as shown in "Section 6 - Wiring Diagrams".

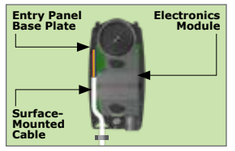


FIGURE 13

Write the Call Button Labels, insert them back into the Lens(es) and clip the Lens(es) back into the Chassis

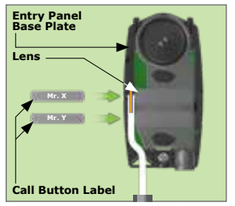


FIGURE 14

Clip the Entry Panel Front Fascia back into position.

It will be necessary when commissioning the unit to have the Front Cover removed.

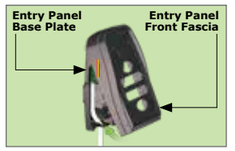


FIGURE 15

Secure the Entry Panel Front Fascia into position using the Fixing Screw provided in the kit.

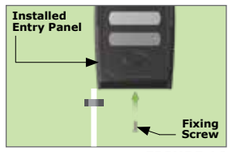


FIGURE 16

5.2. Intercom Handset Installation

Position the Intercom Handset on wall where required at a height that will allow for comfortable use of the Intercom Handset.

A height of 1550mm from the floor to the base of the cradle is recommended.

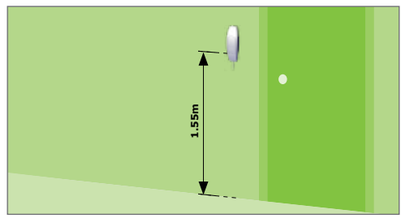


FIGURE 17

Remove the Cradle Base Plate from the Cradle by squeezing the sides of the Cradle inwards.

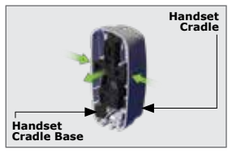


FIGURE 18

Dimentions of the Mounting Holes in the Cradle Base Plate relative to the Cradle.

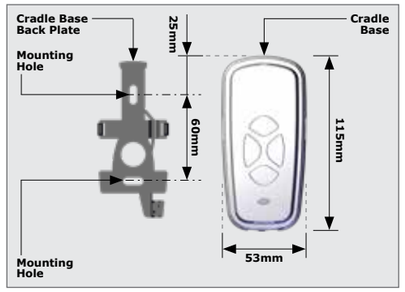


FIGURE 19

In the case of an uneven wall, the tabs may be cut as shown in Figure 20 to allow the Cradle Base to 'sit' on the wall without rocking.

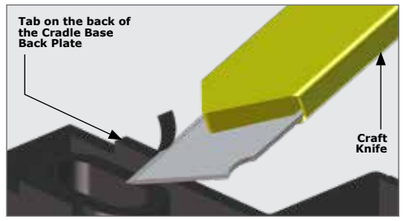


FIGURE 20

Hold the Cradle Base Plate against the wall at the required height and ensure that it is vertical.

Mark the location of the mounting holes.

Using a 6mm masonry bit, drill holes into the wall for the rawlplugs provided in the kit.

If the cable is being routed into the unit from a concealed conduit behind the base, route the cable through the cable entry point provided.

Ensure that at least 140mm of cable extends out of the wall.

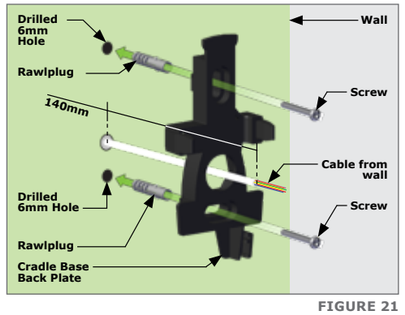


FIGURE 21

Screw the Base Plate firmly into position and use the slots provided in the mounting holes to adjust the base to be perfectly vertical.

Route the cable over the channel in the Cradle Base cross bar. Using the Cable Tie provided, secure the cable to the Cradle Base Back Plate as shown in Figure 23.

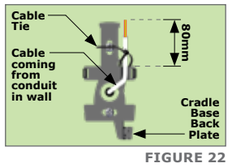


FIGURE 22

Tighten cable tie ensuring that there is sufficient slack to terminate the cable onto the electronics (±80mm).

If the cable is surface mounted, route the cable into the unit from underneath as shown. Secure to cradle base using cable tie provided. Allow sufficient slack (±80mm)

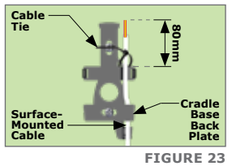


FIGURE 23

Using a sharp knife carefully cut out the Cable Entry Slot to allow the surface mounted Cable to route into the Cradle.

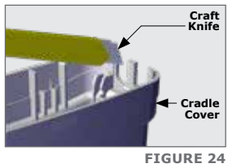


FIGURE 24

Clip the Cradle back onto the Cradle Base Plate.

It will be necessary when commissioning the unit to have the Front Cover removed.

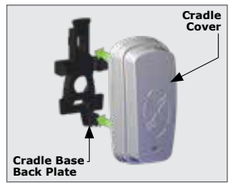


FIGURE 25

Clip the long tail end of the telephone cord into the jack provided at the bottom of the Cradle and similarly into the Handset. Replace the handpiece onto the cradle.

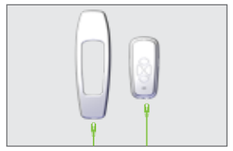


FIGURE 26

6. Wiring

Power Supply

The **INTERCOM HANDSET** operates off a 14V DC supply. The system is designed so that power can be connected to any one of the components in the system.

If the system is being installed with a gate operator that can provide at least a 12V DC 150mA supply, the entry panel can be connected directly to this unit.

If the 12V DC gate motor supply dips when the motor starts up and the intercom is being used at the same time, the speech quality might be affected.

Alternatively if battery power is not available at the entry panel, we offer a 14V DC supply (mains adapter), that plugs into a universal two pin 220 to 240V AC mains supply socket.

A DC jack is provided on the output of the adapter that plugs conveniently into the cradle of any one of the handsets in the system.

Terminals are provided on the cradle electronic module to terminate a 14V DC supply should the supply being used not have a jack compatible with the socket on the cradle.

If the bus voltage (between terminals "1" and "2") is lower than 8V DC, power needs to be applied at another unit in the system.

Wiring

The two wire bus of the **INTERCOM HANDSET** is polarised. If incorrectly connected the unit will not operate, but it will not be damaged.

The length of the bus is limited to a maximum of 150m.

It might be necessary to double up on the thickness of the two wire bus depending on the distance between the entry panel and handsets in the system, and to which component the power supply is connected (handset or entry panel). Refer to cable thickness schedule.

Cable Thickness Schedule

Location of Power Supply	From Comp-onent	No. of Wires	Cable Distance		To Comp-onent	Location of Power Supply
			< 100m	< 150m		
PSU 14V DC		Two Wires	0.2mm²	0.4mm²		
		Two Wires	0.4mm²	0.8mm²		PSU 14V DC

TABLE 2

6.1. Requirements for 12V DC Operators

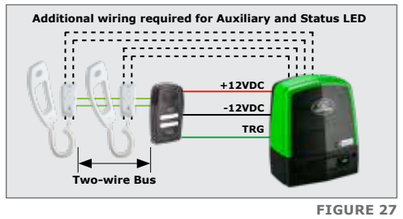


FIGURE 27

6.2. Requirements for 24V DC Operators

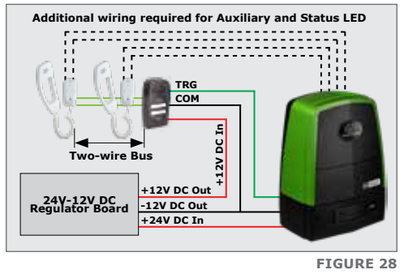


FIGURE 28

6.3. Door Lock Drive

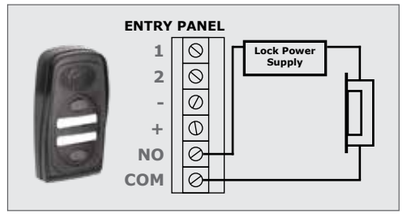
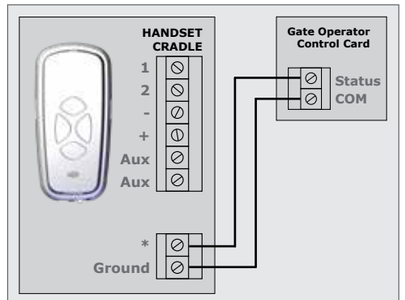


FIGURE 29

6.4. Wiring the Status LED



For SMART Opererators, wire "*" into any of the output termianls that is configured to Gate Status (IO4 is defaulted to "Gate Status")[1]

FIGURE 30

1. Excludes the D3 SMART

6.5. Wiring for the INTERCOM Switch

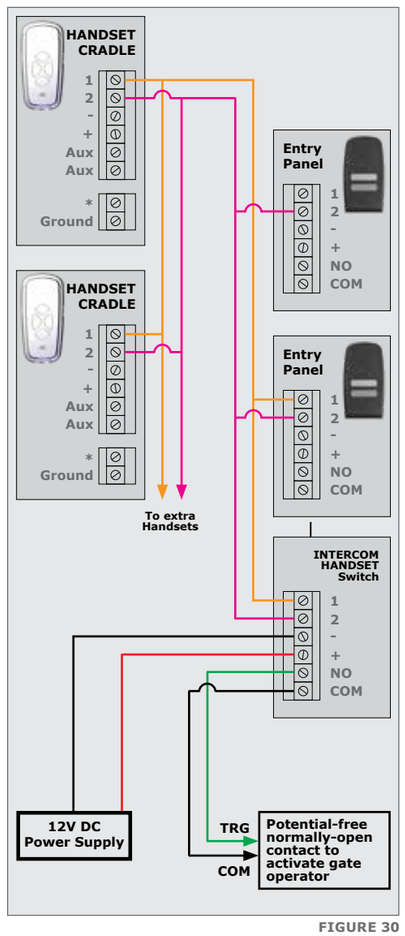


FIGURE 30

- Two-wire bus with secure signal to operate gate
- Connect power to the **INTERCOM HANDSET** via the **INTERCOM** switch. There is no need to take battery power to the entry panel
- An alternative solution is to wire TRG and COM to the Aux terminals on the handset PCB

6.6. Full Site Wiring Diagram (12V DC Operators)

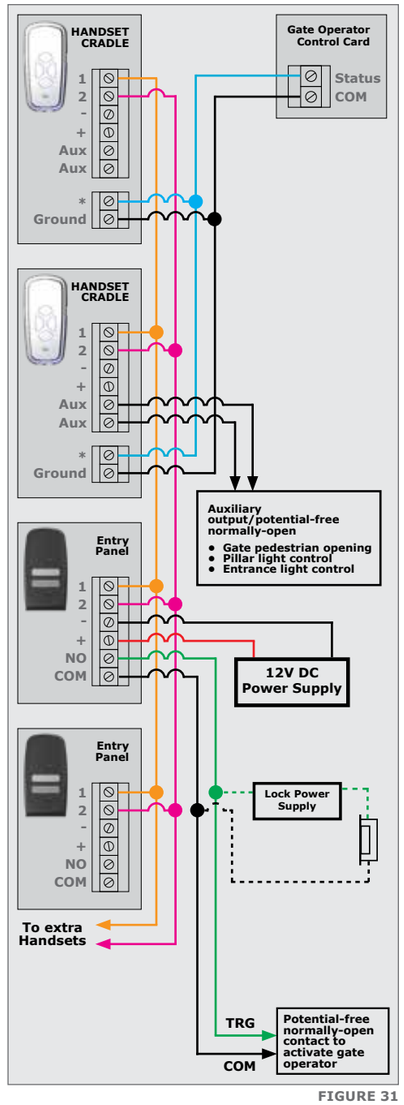


FIGURE 31

For SMART Opererators, wire "*" into any of the output terminals that is configured to Gate Status (IO4 is defaulted to "Gate Status")[1]

1. **Only one 12V DC Power Supply is typically needed to power the system.**
2. **Power can be connected to any component in the system.**
3. **Figure 31 shows the 12V Battery Supply of gate motor connected to the entry panel to power the system.**
4. **If power is being connected to the handset use either a mains adapter with a DC jack compatible with the socket provided or connect 12-14V DC to the terminals.**
5. **If the bus voltage (between terminals "A" and "B") is lower than 8V DC, power needs to be applied at another unit on the system.**

1. Excludes the D3 SMART

7. Completing the installation

7.1. Group and Volume Settings

7.1.1. Entry Panel and Selector Switch

- If the system has only one Entry Panel set the Selector Switch to the upper position[1] or;
- If there are two Entry Panels set the Selector Switch on the one Panel to the upper position[1] and on the other Panel to the lower position[2]
- When adjusting the Speech Volume start by pressing the Call Button to activate the speech on the Entry Panel
- The volume setting depends on the number of **HANDSET**s connected to the system

1. Rotate the volume control knob (B) in a clockwise direction.
2. Test the volume by putting the cover back. An acceptable level occurs just before the entry panel howls.

6.7. Full Site Wiring Diagram (24V DC Operators)

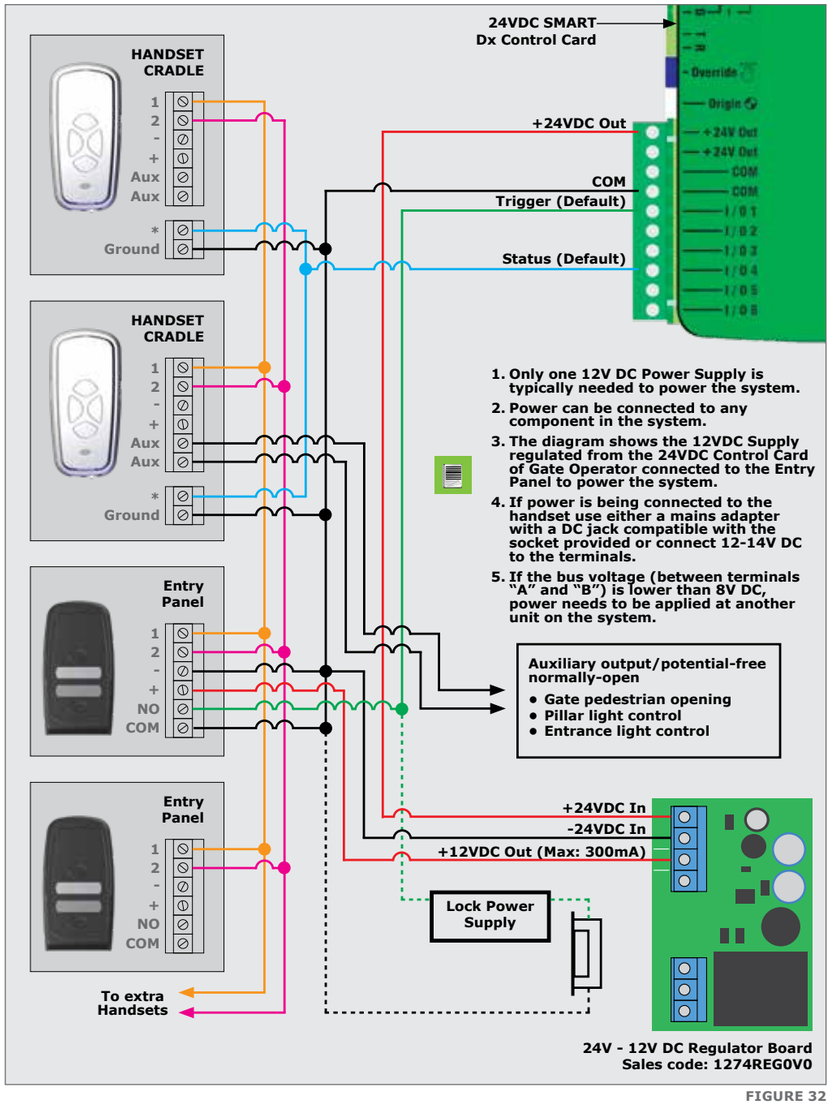


FIGURE 32

7.1.2. One- or Two-Button Entry Panel Configuration

With the entry panel powered up, hold the top and bottom buttons down simultaneously for 5 seconds (5 beeps). After the fifth beep, release the buttons. A confirmation tone will then be heard for 2 The entry panel is now in Configuration Mode, and will be for 10 seconds before it times out. While in this mode, there are two options available to the user:

- Press the top button (one beep will be heard) to set the entry panel as a one-button unit, where each button rings both groups of **HANDSET**s or;
- Press the bottom button (two beeps will be heard) to set the entry panel as a two-button unit, where the top button rings group "A" handsets and the bottom button rings group "B" **HANDSET**s

On power up, the entry panel will beep either once or twice to indicate the configuration selected (one beep for a one-button and two beeps for a two-button Entry Panel).

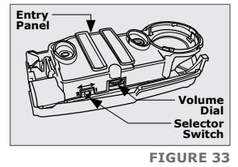


FIGURE 33

7.1.3. **HANDSET** call Group Selector Switch and Volume Control

- Each handset is fitted with a Selector Switch to allow the group number for the specific **HANDSET** to be set. Set the switch depending on which Group, "A" or "B" the respective **HANDSET** is required to be linked

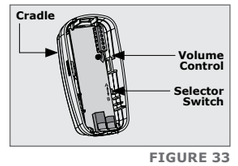


FIGURE 33

- Adjust the speech volume at the handset to approximately 75% by adjusting the control knob. Clockwise rotation increases the volume

7.2. Checking Functions

Press the Gate/Door Release pushbutton on each **HANDSET** and check that the Gate/Door adjacent to each entry panel operates correctly.

8. Fault-finding Guide

- At each **HANDSET** press the pushbutton to call the handsets in the other group. Make sure that these handsets ring and that there is communication
- At each **HANDSET** check the operation of both the auxiliary pushbutton and the status LED if being used
- Replace all covers
- If doing the installation for a client it is recommend when handing over to explain carefully the operation and full functions of the system

Problem	Possible Cause and Solutions
Lights off on Entry Panel	• Check polarity of power supply wires • Check polarity of two wire bus • Check supply voltage • Check two wire bus voltage at Entry Panel
Entry Panel howling when active	• Reduce volume on Entry Panel
Entry Panel relay not triggering when Gate Button is pressed on HANDSET	• Check the correct Group (A or B) is selected on the Entry Panel • Check the bus voltage at the Entry Panel
HANDSET not ringing when called	• Check polarity of two wire bus • Check two wire bus voltage at the **HANDSET** Check supply voltage • Check coil cord connection. • Check that correct Group (A or B) is selected on the **HANDSET**
No speech when HANDSET is lifted	• Increase volume on the **HANDSET** • Check coil cord connection to cradle. • Check the hook switch is free to move