



**Design, Manufacture
and Installation of
Telecommunication
Peripheral
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and Installation of
Telecommunication
Peripheral**

**Pantel
Aluminum
and ABS**

**User Guide
Version 4**

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1. INTRODUCTION

North Supply offers a wide range of Access Control Door Phones for indoor and outdoor entry control. These solutions range from the simplest one button unit to the most sophisticated unit with a full dial pad allowing employee's to open the door by entering a predefined access code. All of North Supply's Access Control Door Phones incorporate cutting edge technology providing a high quality speakerphone and a built in electric lock control. All North Supply's Access Control Door Phones are easy to set-up, modern and durable in designs. This guide provides installation and programming instructions for the following products:

- **PANTEL Aluminum unit for outdoor installation**
- **PANTEL plastic unit for indoor installation**

1.1 PANTEL

The Pantel is a wall mounted access control door phone, which is connected to an analogue port of a PBX or a Key Telephone System. The Pantel is compatible with most known telephone systems and PBX types. With the press of a button, the Pantel dials a pre-defined extension number of up to 20 digits, allowing a conversation to take place and then enables the dialed party to open the door for the caller by pressing touch tone digit(s). Your PABX must be able to send and receive DTMF tones when receiving incoming internal calls to extensions. The Pantel is available in either an aluminum unit for outdoor installation, which is weather and vandal resistant, or in a plastic unit for indoor installation.

1.2 Features

The outdoor and indoor Pantel units have the following features:

- Door **opening** from **any extension** (*provided the called extension can generate valid DTMF tones*)
- Programmable **day** and **night destinations**
- Designed for **wall mounting**
- Works in conjunction with **proximity readers** and other **security devices**
- Hands free intercom
- **Simple** to operate and program
- Available in an **aluminum unit** or a **plastic unit**
- **Outdoor** or **indoor** installation (*ABS Plastic unit is not suitable for exterior applications*)

1.3 Physical Description

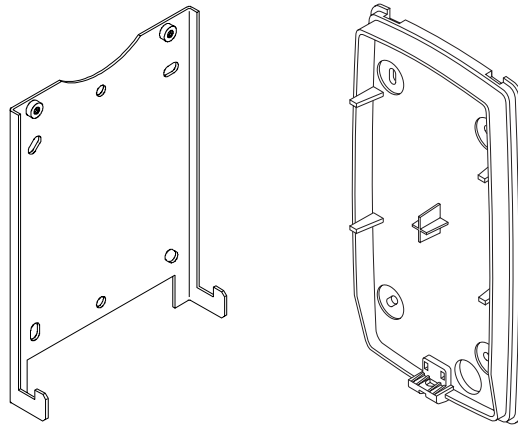


Figure 1.2 PANTEL Front Panel

The front panel of the Pantel unit incorporates a speaker, microphone and a Call button. The front panel is attached to the wall using a bracket and screws.

2. Installation

The Pantel is mounted to the installation bracket provided; this mounting bracket should be installed with the arms of the bracket positioned at the bottom.



Outdoor unit bracket **Indoor** unit bracket

Figure 2.1 Installation brackets

To Install the Pantel wall bracket

1. Measure and mark the location on the wall where the holes will be drilled for the mounting bracket.
2. Drill the holes and insert the plastic molly-plugs into the holes. The molly plugs should be flush with the wall.
3. Attach the mounting bracket using the screws provided.

2.1 Installation Instructions

The Pantel can be installed as the individual access control or can be used with adjacent access-control devices, such as **card reading devices**. **Refer to 2.3 Adjacent Access-Control Devices.**

The Pantel is supplied with a 12V DC/2A power adapter, which provides quieter door-lock action. The power adapter **should not** be located further than **10m (30ft)** from the **Pantel**

Figure 2.2 shows the terminal locations on the wire connector provided with the Pantel. This connector is attached at the base of the internal component. All the wiring to the Pantel is attached to the wire connector.

The Pantel supports “press to exit switch” installation. This allows opening the door with a hardwired switch. The switch should be connected to the SW and /SW terminals. The switch used must be of the normally open momentary contact type.

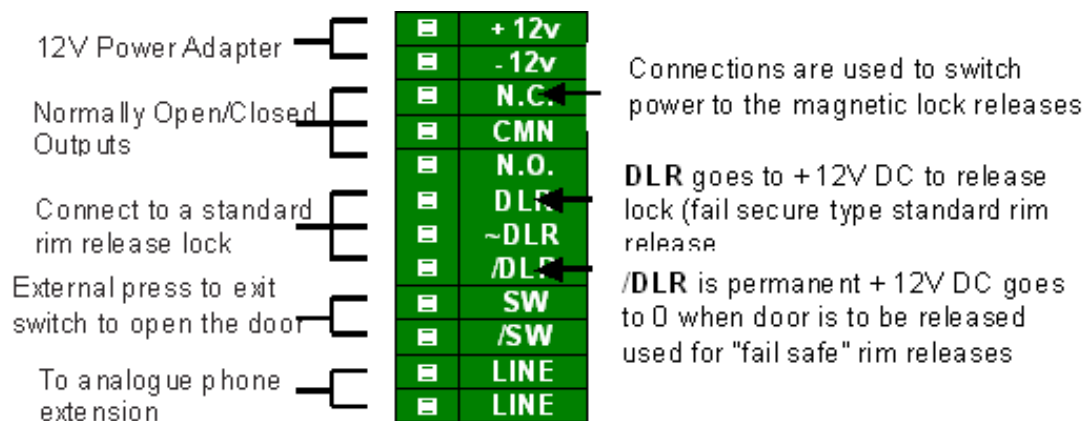


Figure 2.2 Connect Wiring

Note: For installations of powered-unlocked-state use DLR and ~DLR. For installations of powered-locked-state use /DLR and ~DLR. **Only applies to Rim Release Lock supplied as standard equipment by NS**

In order to attach a wire you must insert the stripped end of the wire into the proper terminal and tightening the terminal screw. This will crimp the wire connection.

Caution

To avoid damage to the Pantel the electric power to the 12 V adapters should be turned off prior to connecting wires to the Pantel unit

It is important that only the Rim Releases supplied by NS with the original equipment are connected to the DLR terminals. Other non-standard lock mechanisms may draw excessive current & may damage the unit. If you have an existing non-NS lock mechanism you should utilise the NC/CMN/NO. These dry relay contacts to trigger lock operation.

2.2 To install the PANTEL

1. Remove the cover from the Pantel unit and disconnect the wire connector, found at the base of the internal component.
2. Connect the two 12V lead wires from the 12V power adapter, one to each of the “~12V” terminals. The + 12 VDC lead is colour coded with a white stripe and should be connected to the endmost ~12 V terminal.
3. Connect the two PBX extension wires, one to each of the “LINE” terminals. The Pantel unit does not need to be connected to a “master” LJU socket as the bell ring capacitor is built into the unit.
4. Connect the door-lock relay wires to the “DLR” and “~DLR” terminals if you are using the NS supplied rim release lock.
-Or-
If the relay release lock is a fail-safe type lock, connect the door-lock relay wires to the “/DLR” and “~DLR” terminals.
5. If a push “press to exit switch” is to be used, connect the “press to exit switch wires” to the “SW” and the “/SW” terminals. Make sure the switch is a momentary type and is normally open
6. Plug the wire connector to the base of the Pantel inner component.
7. Place the Pantel onto the mounting bracket.
8. Switch on the power to the 12V adapter.

When powered up the unit will perform a self-test, which involves seizing the analog line going off hook dialing and testing the digits, in order to verify the line characteristics

After installation, you can now program the Pantel unit.

2.3 Adjacent Access-Control Device

This section describes adding an access-control device to an existing Pantel, and adding a Pantel to an existing access-control device. A key difference between these two installations is which Access-control device controls the door lock relay.

2.4 Add a Access Control Device to the Pantel

When activated, the access-control triggers the Pantel “SW” terminal, which activates the door-lock relay and opens the door. For this type of installation, the access-control device “N.O.” output wires are connected to the Pantel Switch terminals. The lock is connected to the Pantel and the access devices e.g. fob reader. Simply trigger the Pantel to release its lock. This is achieved by applying a temporary short circuit to the Pantel ‘SW’ terminals when the lock is to be triggered.

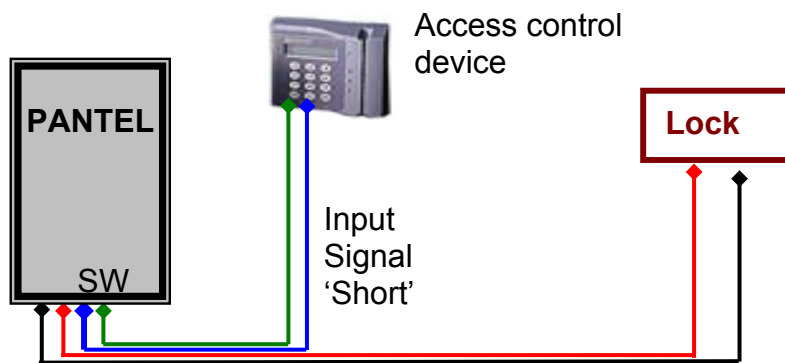
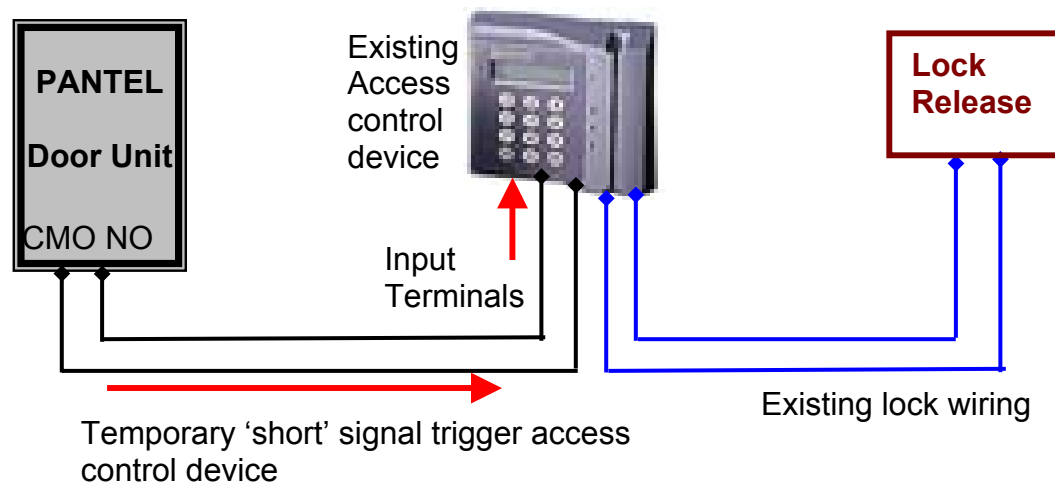


Figure 2.3 PANTEL– Controlling Lock Relay

2.5 Add a Pantel to an Existing Access Control Device

The access-control device opens the door when the Pantel triggers the access-control device. The Pantel assumes the access control device already controls the lock.

For this installation, the access-control device “Press to exit switch” wires are connected to the “N.O.” and “CMN” terminals of the Pantel. The door-lock relay wires are connected to the access-control device. When the Pantel receives a release digit on the phone line, it will operate its dry relay. The dry relay will provide a temporary short to trigger the third party access device



It is important to check that the third party access control device is compatible. The Pantel will provide a short circuit, which is used to trigger the external equipment for example a gate controller

2.6 PANTEL Connection Schematic

The PANTEL offers multiple wiring options.

- **Option 1:** For use with an external device, which require the Pantel to be setup as “Normally Closed”
- **Option 2:** For use with an external device, which require the Pantel to be setup as “Normally Open”
- **Option 3:** For use with powered-unlocked-state lock relay (most common)
- **Option 4:** For use with powered-locked-state lock relay

The following schematic diagram shows the wiring plan for these four options.

PANTEL Circuit (PCB Side)

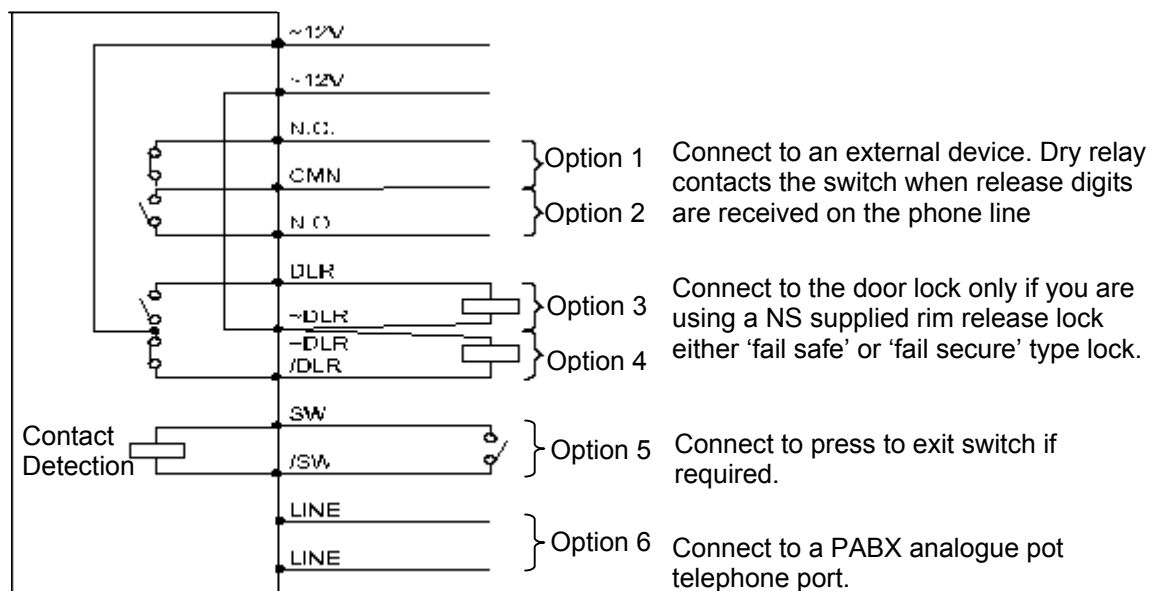


Figure 2.5 Pantel Wiring Schematics Diagram

2.7 Volume Control

The volume of the Pantel speaker can be adjusted a **Blue Square Potentiometer** controller located on the unit's back panel. Remove the unit from the mounting bracket and adjust the volume using a small screwdriver.

2.8 Microphone

There is no adjustment for the microphone sensitivity

3. PROGRAMMING

Programming can be done from any telephone or extension on the PBX, using keypad DTMF tones. Provided the phone system does not bar the sending of Inbound tone digits during the call

Important Notice You will hear a confirmation Beep each time you enter a programming command. If no confirmation beep is observed you must check to ensure that your PABX is sending valid DTMF tones to the destination dialed extension. Consult your phone system maintainer

3.1 To Enter the Programming Mode

Dial the Pantel **extension** from any touch-tone telephone.

Wait until the Pantel **answers** and **beeps**.

Dial *900 this will allow you to enter the programming mode wait for it to **beep**

Enter the Programming **Access Password** (default password is **1234**)


3.2 To Exit the Programming Mode

Dial *900 this will save the settings the user has entered

Alternatively if no dialing occurs within 45 seconds, the program mode automatically exits.

Note: the user must exit by entering *900. Failure to do this may result in programming changes not being saved in the unit memory

Day/Night Mode Selection

Day and Night mode specify which of the programmed destination numbers, Day or Night number, will be called when the  Call button is pressed. The operator can manually toggle the Day/Night mode.

To Change the Day/Night Mode

- Dial the Pantel line/extension from any touch-tone telephone.
- Wait until the Pantel answers and beeps.
- Enter ***80** for Day Mode then hang up
- Enter ***81** for Night Mode then hang up

3.3 PANTEL Setup and Operation

The following table contains programming functions, which can be accessed in the programming mode for Setup and operation.

PBX Parameter Commands

OPERATION	COMMAND	DEFAULT
Enter the programming mode	*900	*900
Enter the programming mode password	1234	1234
Assign the day destination and the EXT number	*360 + X + DN + # X = 1 call button	X = 0
Delete the Day destination assignments	*360 + X + #	
Night destination numbers	*361 + 1 + DN + #	
Delete the Night destination assignments	*361 + 1 + #	
Busy off/on time cadence setups for disconnecting the line when the destination is busy	*371 + X + YYYY X = 1; off time setup X = 2; on time setup YYYY = Cadence in step of 20 milliseconds	500 msec 500 msec
Digit(s) to open the door from any extension	*441 +XXXX + # XXXX = Digits (0-9) Note: A string upto 4 digits long is valid	8
Maximum time for the line to be opened (sec)	*462 + XX XX = Seconds (10-99)	45 sec
Door Lock Opening time. Time limit (sec)	*464 + X X = Seconds (1-9)	3 sec
Change the system administrator's password	*600 + New password (must be 4 digit). Warning: Do not use the * or # keys	1234
Exit the programming mode	*900	*900

Busy Off/On is used by Pantel to detect if the dialed extension is busy. If your PBX gives a non standard busy tone then you may need to adjust this parameter you should consult your PBX maintainer for busy cadence timings Only if the Pantel fails to recognize calls to a busy number

4. Specifications

AC/DC Power Supply	12V DC/1.6A
Line Voltage	24-72VDC
DC Leakage	< 10 μ A
On-hook insulation resistance between line terminal and ground	0-100VDC > 5M Ω 100-200 VDC > 30 K Ω 500VAC/50Hz > 20K Ω 100VAC/25Hz > 100K Ω
Ring Capacitor	0.47 μ F \pm 10%
On-hook Impedance	@50VDC, 40VAC/25Hz>3000 Ω
Ring Detect	27-100 VAC/16-60 Hz
DC Resistance (off-hook)	24-66VDC @ 20-100mA 350 Ω
Impedance (off-hook)	300-3400Hz 500-700 Ω
Imbalance Ratio	300-3400Hz > 46dB
Return Loss	300-3400Hz > 18dB
Current During Break	< 700 μ A
DTMF Transmission:	
Frequency Tolerance	\pm 1.5%
Frequency Level (high)	-6 to -8dBm
Frequency Level (low)	-8 to -10dBm
Inter-digit Pause Time	70-80ms
Max Current for Relay	2A
Dimensions	18.5cm x 9.5cm
Operating Temperature	Outdoor: -20 $^{\circ}$ c to +50 $^{\circ}$ c Indoor: 20 $^{\circ}$ c to +35 $^{\circ}$ c
Ingress Protection Rating	Pantel ABS – 50 Pantel Aluminum – 56
Equivalent to:	Protected against dust limited ingress (No harm full deposit)
Solid Rating 5X	No Protection
Liquid Rating X0	Protected against low-pressure jets of water from all directions.
X6	Limited ingress permitted

5. Trouble Shooting

1. **I am unable to release the door lock from my digital extension by pressing “8” when in conjunction to the Pantel.**

You need to set up your PABX to send “in band DTMF” tones on received incoming internal calls. Check with your PABX maintainer

2. **I am receiving Audio feed back from the door unit**

Reduce the Pantel speaker volume by adjusting **blue square potentiometer** situated at the back of the door unit – using a screwdriver you can reduce the volume.

If installed in a confined area acoustic bounced feedback can occur this can causes premature call cut off

Ensure the unit is not installed in a closed environment as this can cause audio feed back. Relocation of the unit may improve. The microphone is sensitive upto 1-2 meters therefore do not install immediately facing hard surfaces, which are immediately in front of the unit within this distance

3. **Conversation cuts off while talking**

Receiving audio feedback – refer to question 2

Check the telephone system – compatibility could be an issue.

4. **How do I connect the Pantel door unit to a rim release door Lock?**

Connect the wires to DLR and ~DLR.

5. **How to connect the Pantel door unit to a switch.**

Connect the wires to SW and /SW refer to 2.6 PANCODE Connection Schematic

6. **When I press the digit 8 on the telephone system it does not unlock the door**

Check the connectivity from the door unit to the Door Lock is correct, ensure you have connected the wires to the correct contacts. Alternatively check you have correctly programmed the unit

Check the 12V power supply and the distance it is at, if the distance is too great the unit may cause intermitted faults due to low voltage at unit

7. The user presses call button it rings the extension number then it cuts off.

Audio Feedback is the most likely cause – adjust the volume and re position the unit

8. The user presses the call button it rings the extension number during the conversation the call automatically cuts off

Audio Feedback is the most likely cause – adjust the volume and re position the unit.

9. Cannot hear DTMF tones passing through the line

Test the unit with a Butt refer to Pancode diagram page 18

10. When I press the call button I can hear it sending tones but the telephone does not ring.

Ensure your telephone system can send and receive DTMF tones at the standard rate.

To test the unit is working correctly

- Connect a double adapter to the analogue port that the door unit is connected
- Connect the Butt phone (standard analogue phone) to the analogue port and set it to monitor mode.

If you can hear DTMF tones been sent and received the unit is working 100%

Ensure you are programming the unit with the correct extension number

Ensure the port you are connecting the unit to is live

11. The user presses the call button the conversation takes place, when the user press the digit 8 on the telephone system the door does not unlock?

Depending on your lock check the wire connectivity refer to the wiring diagram located at the back of the user guide.

Error with the telephone system – some telephone systems do not accept DTMF tones on an internal call – they will on an external call but not on an internal call. Using your telephone system you will be able to program the unit but not release it on an internal call

- When the user presses the call button

- The user picks the call conversation takes place
- This is an internal call, it will not allow the user to send the digit 8 whilst talking.. refer to your telephone maintainer

12. I have inputted the incorrect password 3 times the keypad does not work?

The keypad locks up after inputting the incorrect staff access code 3 times. The keypad will be disabled for upto 60 seconds, it is a design feature within the unit

If you have any further queries you can contact North Supply Technical Support on 0870 2416737 with the unit Serial number located at the rear of the unit indicating the hardware and software revision number

13. I am unable to access programming mode using the default password 1234. Unit hangs up after password entry,

The password has been changed. Use your configured password. If you have forgotten this password, you can use the override password "0000" to gain access to the programming mode. Use the *600 program to enter a new password.

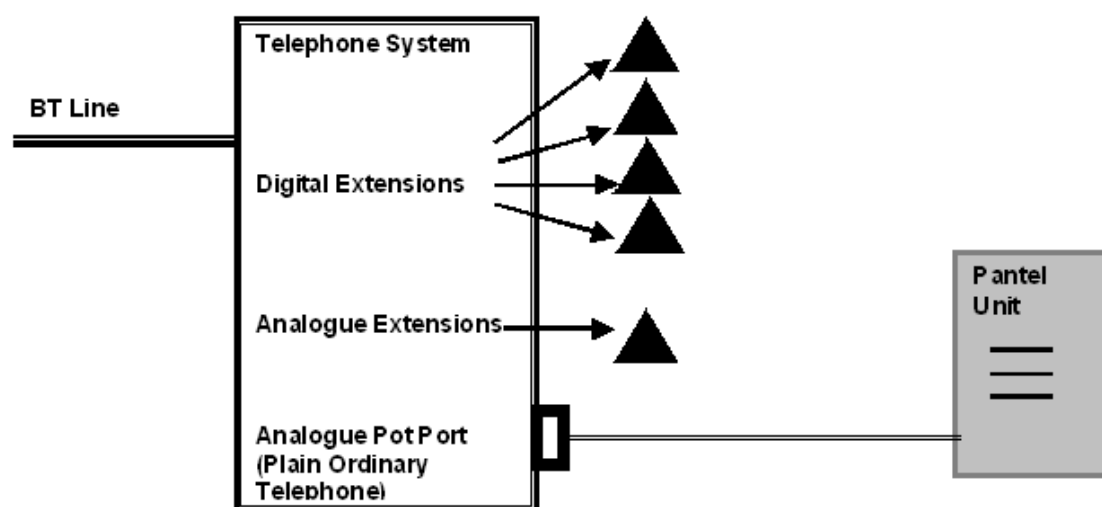
We highly recommend you avoid using this method in order to access the programming mode. NS is not responsible if this method is used to access the programming mode

If you have any further queries you can contact North Supply Technical Support on 0870 2416737 with the unit Serial number located at the rear of the unit indicating the hardware and software revision number

6 Pantel DTMF Tones

When the call button is pressed the Pantel unit will go “OFF HOOK” simulating lifting the handset and then dial the configured extension number. Once the dialled extension answers a two-way conversation is possible. The dialled user can release the door lock and force the Pantel to go “on hook” (hangs up) by sending a valid DTMF tone digit.

Please Note Norstar phone systems will need long tones enabled on the ATA. Toshiba DK systems may require additional hardware to enable tone sending. IP Office systems are not variants, not capable of sending DTMF release digits. Consult your PBX maintainer

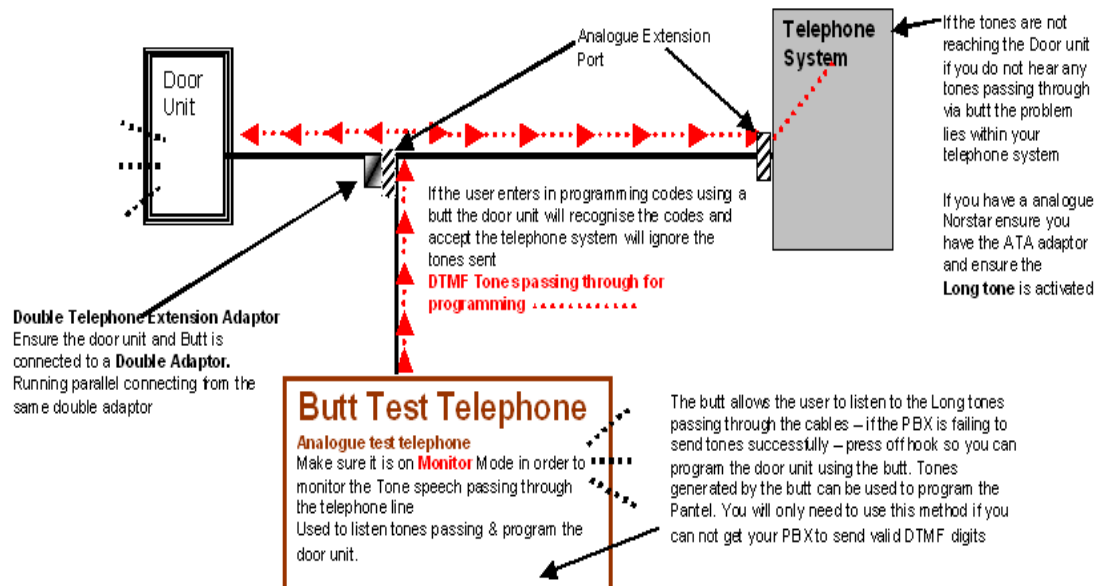


7 Pantel Fault Diagnose

The Telephone system must generate industry standard DTMF tones in order to program the Door entry system. To check if these tones are being sent by the PABX do the following:

Step 1 Dial up Pantel ext number from extension on PABX, Pantel will auto answer ringing ext port + 2 way speech ensure butt is in monitor mode. Press the keys on the phone & check you can hear DTMF tones using the test butt (monitor mode) if no tones are being sent by the phone system & it is not possible to enable tone sending. You can generate the programming tones at the locally connected test butt. To do this follow step 2

Step 2 On the test butt go "off hook". If the Pantel unit recognises these tones then failure to recognise program tones or release digits is caused by incorrect PBX programming (digits pressed on customer phone aren't sent to Pancode by PBX as standard DTMF tones)



8 Pantel Wire Connection Diagram

This diagram illustrates the connectivity depending on the output

Pantel Wire Connection Diagram

