

# **ProTalk<sup>®</sup>** ***Plus***

## **Alarm Reporting Unit Operating Manual**

***BE* BARNETT ENGINEERING LTD.**  
**[www.barnett-engg.com](http://www.barnett-engg.com)**

# **ProTalk<sup>®</sup>** ***Plus***

## **Alarm Reporting Unit**

## **Operating Manual**

### **Model B1290**

215, 7710 5th St. S.E.

Calgary, Alberta, Canada

T2H 2L9

Phone: (403) 255 9544

Fax: (403) 259 2343

Web: [www.barnett-engg.com](http://www.barnett-engg.com)

e-mail: [sales@barnett-engg.com](mailto:sales@barnett-engg.com)

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***BE* BARNETT ENGINEERING LTD.**

## ACTA/IC Customer Instructions

The ProTalk Model B1290 ARU meets and exceeds the necessary requirements for operation and connection to a PSTN telephone line in Canada and the United States. It currently holds the following approvals:

1. FCC part 15, subsection J/A
2. Industry Canada CS-03 Part I Issue 8
3. TIA/EIA-968
4. CSA C22.2 No 60950-00 / UL 60950, 3rd Edition

### FCC Regulations

1. This equipment complies with Part 68 of the FCC rules and the requirements adopted by ACTA. On the side of this equipment is a label that contains, among other information, a product identifier in the format US:AAAEQ##TXXXX. If requested, this information must be provided to the telephone company.

2. A plug and jack used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by ACTA. A compliant telephone cord and modular plug is provided with this product. It is designed to be connected to a compatible modular jack that is also compliant.

3. The ringer equivalence number (REN) is used to determine the number of devices that may be connected to a telephone line. The total number of all RENs on any one line should not exceed 5.0 in most cases. Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the telephone company to determine the maximum REN for the calling area. The REN for this product is shown separately on the label and is also part of the product identifier that has the format US:AAAEQ##TXXXX. The digits represented by ## are the REN without a decimal point (e.g. 00 is a REN of 0.0).

4. If the ProTalk Plus model B1290 causes harm to the telephone network, the telephone company will notify you in advance that a temporary discontinuance of service may be required. But if advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

5. The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make the necessary modifications in order to maintain uninterrupted service.

6. If trouble is experienced with the B1290, please contact Barnett Engineering Ltd., 215 7710 5th Street SE, Calgary, Alberta, Canada T2H 2L9 for repair and/or warranty information. If the trouble is causing harm to the telephone network, the telephone company may request you remove the equipment from the network until the problem is resolved.

7. Repair work must be performed by Barnett Engineering Ltd.

8. This device must not be installed on coin-operated or multi-party telephone lines.

### **Class B Computing Device**

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/ TV technician for help.

### **FCC Part 68 Continuing Compliance**

The testing which will be performed on this equipment as part of the Part 68 compliance program will essentially follow the same format as the contained in the test data portion of this application. Testing and evaluation will be performed at least annually on a minimum of one production unit. Testing will be performed in-house or by a laboratory that has the proper facilities for verifying compliance to the requirements of Part 68. Should

such testing indicate the need for changes to the equipment under test, said changes will be demonstrated to comply with Part 68 by testing and evaluation and proper notification will be given to the FCC in the form of a modification filing.

Upon request from the FCC, copies of the reports showing Part 68 compliance for a recent production lot, or one or more units for Part 68 compliance verification inspection, will be supplied.

### **Industry Canada Regulations**

**NOTICE:** This equipment meets the applicable Industry Canada Terminal Equipment Technical Specifications. This is confirmed by the registration number. The abbreviation, IC, before the registration number signifies that registration was performed based on a Declaration of Conformity indicating that Industry Canada technical specifications were met. It does not imply that Industry Canada approved the equipment.

**NOTICE:** The Ringer Equivalence Number (REN) for this terminal equipment is 0. The REN assigned to each terminal equipment provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed five.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with a single line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas. *Caution: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.*

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## Introduction

### Description

#### Basic Operation

The ProTalk Plus model B1290 is a device used to monitor alarms at an unattended site. If an alarm occurs, such as building intrusion, power failure, high or low temperature or equipment failure, the B1290 automatically dials out on the telephone line. When the telephone is answered, the B1290 announces in a clear voice the name of the site and the alarm condition that has occurred. If there is no answer, the B1290 will continue to dial through a list of telephone numbers until it reaches someone and is able to report its alarm.

This manual describes the basic operation of the ProTalk Plus model B1290, and its most common applications. The B1290 can, however, be programmed to perform many more functions at the discretion of the user. It can announce alarms over radio, telephone, a public address system or a combination of these. It can also be programmed to send coded tones along with the voice messages to activate such devices as radio pagers, relays or annunciator panels. It can be used as a master station to concentrate alarms from a number of remote sites. It can be commanded to perform remote control functions by receiving codes from a tone telephone. Expanders can be added to increase the capacity of the unit from the basic eight alarm inputs and four relay outputs up to 64 inputs and 32 outputs.

The B1290 can be completely customized for your application because all of the operating parameters are programmed by the user, including the voice messages. Like its predecessor, the ProTalk B1270, the B1290 can also be programmed using a standard tone telephone. A stored voice in the B1290 prompts you step-by-step when you are entering new voice messages or codes, and speaks back all the values that you have saved.

With the added feature of PC software, it is also possible to program the B1290 from a computer. Using the PC software all of the information in the B1290 can be read, written and stored to disk.

The programming sections of this manual describe how the B1290 is configured with a phone set. Instructions for programming with the software application are found in the Help section of the program.

## **How to Use this Manual**

This manual is organized in such a way that if you want the B1290 to function with its default settings as a simple telephone dialer, you need only read the first two chapters of the manual covering the physical installation, basic programming and operation. If you wish to change some of the default settings or have the B1290 perform more advanced functions, continue on to the next chapter where the Program Codes are described in detail. Several step-by-step examples of programming the B1290 into different configurations are given. The final chapter describes some of the problems most commonly experienced when the B1290 is first installed, and gives advice on troubleshooting.

## Getting Started

### Description

The B1290 is housed in metal case with plug-in terminal blocks and jacks for field wiring. Table 1 and Figure 1 show the connection points to the B1290. Figure 3 shows how wiring connections are made to the unit.

**Table 1: ProTalk Wiring Connections**

#### RADIO

- 1 Radio TX
- 2 Radio RX
- 3 PTT Output.
- 4 COS Input
- 5 Ground
- 6 ACK Input
- 7 Ground
- 8 +11.5 to +28 power

#### RELAYS

- 1 Relay 1 NC
- 2 Relay 1 Common
- 3 Relay 1 NO
- 4 Relay 2 NC
- 5 Relay 2 Common
- 6 Relay 2 NO
- 7 Relay 3 NC
- 8 Relay 3 Common
- 9 Relay 3 NO
- 10 Relay 4 NC
- 11 Relay 4 Common
- 12 Relay 4 NO

#### SERIAL

- 2 RXD
- 3 TXD
- 4 DTR
- 5 GND
- 6 DSR

#### ALARMS

- 1 Alarm 1 Input
- 2 Alarm 2 Input
- 3 Alarm 3 Input
- 4 Alarm 4 Input
- 5 Alarm 5 Input
- 6 Alarm 6 Input
- 7 Alarm 7 Input
- 8 Alarm 8 Input
- 9 Ground
- 10 Ground

#### POWER

2.1mm power, center ground

#### PHONE

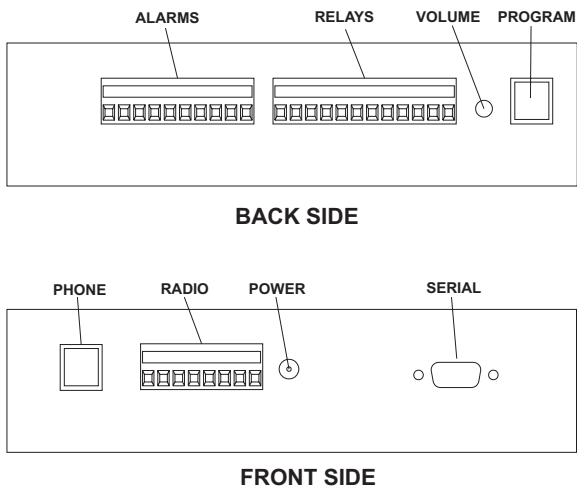
RJ11 Line 1

#### PGM

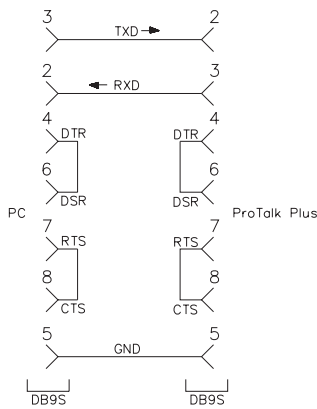
RJ11 Line 1

#### EXP

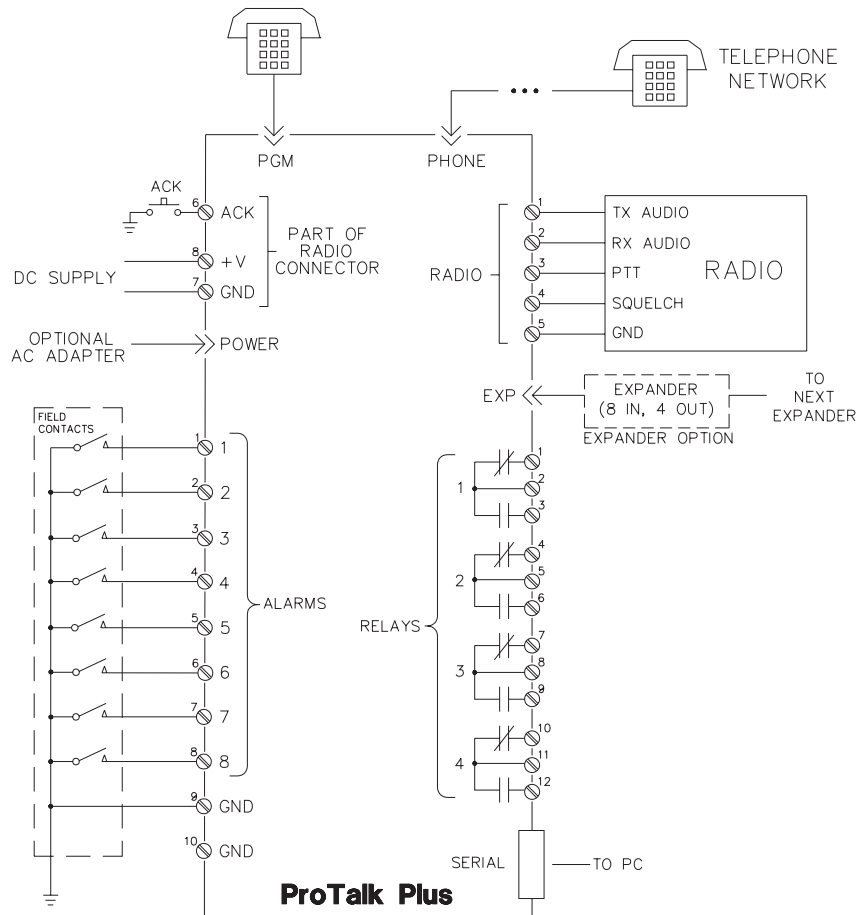
2.1mm mono, center data



**Figure 1 Connector Locations**



**Figure 2 Programming Cable Wiring**



**Figure 3 ProTalk Plus Wiring Diagram**

## Power Requirements

The B1290 will operate from a supply of +11.5 VDC to +28 VDC. The typical current requirement is 100 mA plus 10 mA per relay. Each expander uses an additional 60 mA plus 25 mA per relay.

Connect power only to one of the two available inputs: the DC inputs on the Radio terminal block or the plug used with an AC adapter.

## Installation

*The B1290 should be installed in a clean, dry place suitable for electronic equipment. The unit will operate from  $-40^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$ .*

*Caution: Power and the telephone line should not be connected until the rest of the installation is complete.*

Use a flat blade screwdriver to make connections to the screw terminals on the sides of the enclosure.

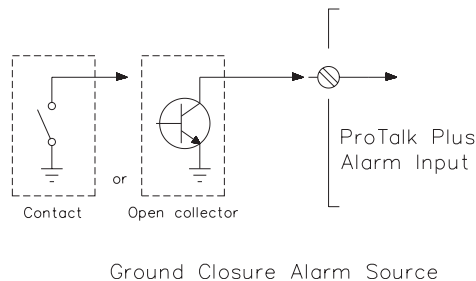
## Alarms

In its default condition, the B1290 looks for a normally open (NO) contact which closes to ground to indicate an alarm. The B1290 may also be programmed to accept inputs normally closed (NC) to ground which open on an alarm condition. To change this parameter, refer to the alarm format in I/O Configuration - Program Code 5. When using NC contacts, ensure that all unused alarm points are either disabled or connected to ground. Refer to Figure 4 for details on how to connect an alarm signal line.

All of the alarm inputs are optically isolated and are operated from the B1290's internal 12 volt supply.

Connect the alarm inputs to the positions labeled 1 through 8 on the ALARM terminal block.

*Caution: DO NOT connect a voltage source to the alarm inputs.*



**Figure 4 Alarm Input Connection**

## Relays

Four form C relay outputs are available, rated for 1.0 A at 30 VDC, or 0.3 A at 120 VAC. Connect external devices to the contacts on the RELAY connector. When connecting to larger loads, connect an interposing relay between the B1290 and the load.

## Radio

If the alarms are to be announced over radio, connect TX to the transmit audio of the radio, and RX to the receive audio. *RX should always be connected to squelched audio.* Independent transmit level adjustments are available for voice, DTMF and tone signals. Adjust the levels of the transmit audio signals using the programming phone or the software setup. For the receive level adjustment, set the programmed level to match the level of the incoming signal: for a -10 dBm received signal from the radio the programmed value would be -10 dBm. The range of adjustment for both receive and transmit signals is -20 dBm to 0 dBm.

The PTT output provides a ground closure through an open collector to signal the radio to transmit. Connect this point to the radio's push-to-talk circuit. The maximum rating is 150 mA, 25V.

The COS input is used to indicate to the B1290 whether the radio channel is busy. Connect this point to the output of the radio's carrier-operated switch or relay (COS or COR). In its default condition, the B1290 looks for a high signal to indicate the channel is clear and a low signal when the channel is busy. The B1290 may also be programmed to recognize the reverse polarity. To change this parameter, refer to the squelch polarity in System Settings - Program Code 6. This input is internally pulled up to work with open collector radio outputs. In its default program condition, the input is pulled high when clear and driven low when busy.

## Local Acknowledge

This input is used to acknowledge an alarm locally at the B1290 without having to call in over the radio or telephone. Connect the ACK input to a normally open contact which will be grounded to acknowledge the alarm.

## Telephone

The telephone line is connected to the RJ11 jack labeled PHONE on the side of the B1290. The line should be using the inner (red/green) pair. Audio levels to the telephone line are fixed internally in conformance with FCC regulations.

The telephone should always be the last item connected.

*Caution: DO NOT plug the telephone line into the PGM jack, as damage could result to the B1290.*



**Expanders**

Expanders are used to increase alarm and relay capacity of the B1290. They come in their own metal cases with all connectors clearly labeled. Expanders must be located in close proximity to the master B1290 unit for them to communicate properly. The shielded cables provided to connect between units are cut to accommodate the maximum allowable distance. Substituting cables is not recommended.

Make the alarm and relay connections to the expander in the same way as for the B1290. Use the shielded cable provided to connect between the EXP connector on the B1290 and SERIAL IN on the expander. On subsequent expanders, use the cable supplied with the expander to connect between SERIAL OUT on one board and SERIAL IN on the next.

Next set the DIPswitches on the expander to configure its ID number.

Expander Number	Position 1	Position 2	Position 3
1	OFF	ON	ON
2	ON	OFF	ON
3	OFF	OFF	ON
4	ON	ON	OFF
5	OFF	ON	OFF
6	ON	OFF	OFF
7	OFF	OFF	OFF

DIPswitch positions 4 through 7 must remain on.

Position 8 is used to control the LEDs. It is normally ON, but if you wish to conserve power by disabling the LEDs, set this switch to the OFF position.

If the expander address is changed, the unit must have power removed and then reapplied in order for the master to recognize its new address. All the expander's programmed parameters, aside from the voice messages, are stored in the main ProTalk Plus and are downloaded on power-up.

The expander database will be automatically transferred from the ProTalk Plus if an expander address is changed or an expander is replaced.

The expander requires its own +12 VDC and GND connections. Be sure that all units, master and expander(s), are always powered up and down together. Do not connect or disconnect expander cables when the system is powered up.

The POWER LED lights when the power is on. The expander also has an RX LED which lights when it is being polled by the master B1290, and a RESPONSE LED which indicates when it is responding.

### **Power-up Sequence**

Once the installation is complete, DC power can be connected to the B1290. On start-up, the B1290 will go through the following self-test sequence:

1.    LED Test
  - VOICE, TONE and, HOOK LEDs On.
  - PTT LED Off
  - RUN LED Flashing
2.    Hardware Test
  - ALARM LEDs 1-8 On
  - Memory test
  - One second dwell time for this test
3.    Vocabulary Voice Test
  - ALARM LEDs 1-7 On
4.    User Voice Message Test
  - ALARM LEDs 1-6 On
5.    Database Setup
  - ALARM LEDs 1-5 On
6.    End of Test
  - ALARM LEDs 1-8 Off
  - One second dwell time
  - Software version spoken over the speaker
7.    Normal Operation
  - RUN LED Steady

The telephone line may then be plugged in as the last connection. *Ensure that the telephone is connected into the PHONE port on the B1290.*

## Start-up Programming

### Introduction

Now you are ready to begin programming. When the B1290 is initially powered up, it will prompt you to input three parameters which must be entered before it can operate — the voice messages, a list of telephone numbers and the Acknowledge Code. Once these values have been entered, with its default settings, the unit will function as a straight telephone dialer when an alarm is present. If you require the B1290 to perform more advanced functions, continue on to the chapter where the Program Codes are explained in detail.

Before you start programming, there are a few points with which you must be familiar. First, although it is possible to program the B1290 remotely by calling it up over the telephone line, it is assumed that when you initially install the unit you will be using a local programming phone. The B1290 must be programmed with a phone which sends DTMF tones (Touch Tone); it will not recognize the signals from a phone which sends dial pulses.

The B1290 is designed to be user friendly. When you listen in the earpiece of the programming phone, you will hear spoken messages. These are called voice “prompts”, and they tell you what information the B1290 is expecting you to enter. Whenever you program a new value, the B1290 will immediately speak that parameter back to you, so you will know right away whether the code was entered correctly. You can change a parameter as many times as you like before going on to the next one. If you make a mistake, such as entering a value outside the range for that parameter, the B1290 will immediately let you know by announcing *Error*. And if you get confused, just hang up the phone and start again. The B1290 will start again at the beginning when you pick up the handset.

The other feature you need to know is how to enter data. If you were entering information from a keyboard or other terminal, you would use the “Enter” key or a “Carriage Return”. A telephone does not have this key, so we substitute the code **\*\*** for “Enter”. The two “stars” (asterisks) must be entered one after the other, with no more than one second between the beginning of the first digit and the beginning of the second. This is a much longer time than most people think, and there is no need to rush when entering the code. If you enter the digits too fast, the telephone will only recognize one **\***. You may get an *Error* message if this happens or else the B1290 will ignore the entry and wait for another **\*\***. The **\*\*** code is used throughout the programming sequence to enter information or proceed to the next step. With practice you will soon determine the correct speed.

Where the # digit is used in a DTMF code or a telephone number it must be entered as two # digits. For example, the DTMF code #2# would be entered as ##2##.

The B1290 will not work the way you want it to until all three of the required parameters have been entered correctly, so if you hang up in the middle of this procedure, the B1290 will take you back to the beginning of the sequence the next time you come off hook.

Throughout the programming sequence, the unit will speak stored parameters using a prompt, followed by the word “is”, then the stored data. For example, to tell you the Acknowledge Code is set to 1234, the B1290 says *Acknowledge Code is 1234*. Input from the telephone’s keypad is expected following this message. Whenever voice messages are required, the unit will beep twice, prompting the user to speak into the telephone handset.

### **Site ID and Voice Alarm Messages**

Plug any standard tone telephone into the jack labeled “PGM”.

Lift the handset to your ear. You will hear the B1290 speak the words *Program voice; site is* followed by silence since there is no voice message programmed.

B1290: Program voice.

Site is...

The B1290 is prompting you to enter the name of the site. The name you program will be announced at the start of every message along with the list of alarms.

To record the voice message, enter the record code (2).

YOU:

After you hit the second star, the B1290 will prompt you with a beep-beep tone.

B1290: beep-beep

As soon as you hear the tone, you can begin to record your message. The VOICE LED on the front panel will light while the B1290 is recording. Speak the name of the site, e.g. Ajax Compressor Station. The B1290 detects when you stop speaking and automatically plays back the message. Pauses between words may cause the recording to terminate. The VOICE LED will light while it is playing back.

YOU: *Ajax Compressor Station*

B1290: Site is Ajax Compressor Station.

Did the message played back sound acceptable? If you think it could be improved, enter the record code (2) followed by \*\* again and repeat the message as many times as you like. Once you are satisfied with the way the message sounds, hit the enter code (\*\*).

YOU:

The B1290 will prompt you for the next entry.

B1290: Alarm One is...

Repeat the above steps to record the alarm message, e.g. power failure.

YOU:

B1290: beep-beep

YOU: *Power Failure*

B1290: Alarm One is Power Failure.

Repeat the above steps until you are satisfied with the way the message sounds. Then continue.

YOU:

B1290: Alarm Two is...

Enter the voice message associated with the second alarm point, e.g. intrusion alarm.

YOU:

B1290: beep-beep

YOU: *Intrusion Alarm*

B1290: Alarm Two is Intrusion Alarm.

YOU:  *Next*

B1290: Alarm Three is...

Repeat the above steps until all the alarm points have been programmed. When you have entered all the voices, enter Quit (**#\*\***) at the announcement of the next empty alarm. If you use all eight alarms, the B1290 will automatically advance after you enter the last voice message. The next step in the startup process is to program the telephone numbers.

YOU:

### Telephone Numbers

B1290: Program Directory

B1290: Directory A, Line One is Radio Alert Voice. (default)

The B1290 has just spoken the actions that will occur from the commands on the first line in Directory A. The default radio announcement will now be replaced with a phone call-out command. Enter 2 to indicate you want to program the line with new commands.

YOU:  *Change line*

B1290: beep

Details on how directory commands are entered are shown in Program Code 2 Directories. The startup process described here provides only the basic auto-dialer configuration.

Enter the phone number using the pushbuttons on your telephone. The entry shown below will result in the B1290 dialing the selected number and then speaking the alarm messages. The #0 at the beginning is the DIAL command, followed by a #8 command for VOICE.

YOU:

B1290: Directory A, Line One is DIAL 2559544 VOICE.

If there is an error in the entry, hit the program code 2 followed by \*\* and try again. If the sequence is played back correctly, hit the enter code.

YOU:  Next

B1290: Directory A, Line Two is empty

The B1290 is prompting you for the second directory line. The commands entered for line 2 are what will occur if there is no acknowledgement after the first line commands are completed during operation.

YOU:  Change line

B1290: beep

YOU:

B1290: Directory A, Line Two is DIAL 2552343 VOICE.

YOU:

B1290: Directory A, Line Three is empty.

The B1290 is prompting you for a third telephone number to dial if it cannot get an answer at the first two. Continue entering telephone numbers up to a maximum of twenty. If you are not using twenty numbers, enter the Quit code (#) at the prompt. If you hit the Enter code (\*\*) for an empty telephone number, the B1290 assumes that you have no more telephone numbers to enter and will jump to the next function.

YOU:

or

YOU:

### Acknowledge Code

B1290: Program Acknowledge Code.

B1290: Acknowledge Code is 1234.

The B1290 is prompting you to enter an acknowledge code. This is the code you send to the B1290 when it calls you up to announce an alarm, to acknowledge that you have received the message. Otherwise the unit will keep on dialing. 1234 is the default code. You may use this code or enter a different one from 1 to 8 digits in length. It should be something easy to remember.

YOU:

B1290: Acknowledge Code is 2468.

YOU:

B1290: Enter Program Code.

The B1290 is prompting you to enter a Program Code if you need to program more advanced functions into the unit. If you require them, proceed to the chapter where Program Codes are explained in detail. Otherwise, hang up the programming phone.

At this point the B1290 will function as an alarm reporting unit over the telephone, dialing through the numbers you have programmed into Directory A until it is answered, then announcing the voice messages you have recorded to report an alarm.

Unless something happens to corrupt the memory of the B1290, these parameters will be stored indefinitely and you will not be prompted to enter them again.

The next time you lift the programming phone off hook, the B1290 will announce its status and prompt you to *Enter Control Code*. DO NOT enter any codes from the telephone. WAIT five seconds; the B1290 will time out and automatically enter the programming mode. When you hear the prompt *Program Access; Enter Program Code*, you may begin programming.

***Do not remove power from the B1290 while you are programming. Always put the telephone handset back on-hook before removing power.***

## Front Panel

The front panel of the B1290 is shown in Figure 5. The description of the front panel indicators will assist you in verifying the correct operation of the unit.

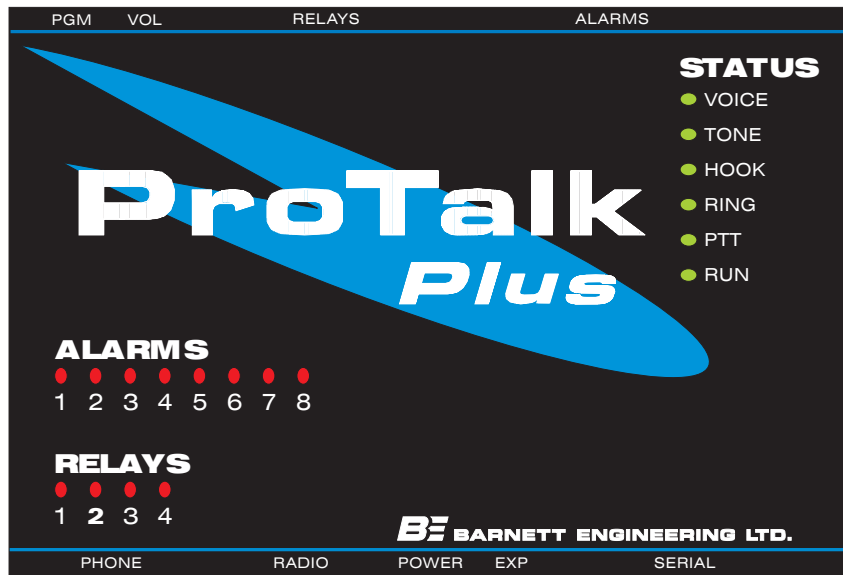


Figure 5 ProTalk Plus Front Panel

### Alarm LEDs

The Alarm LEDs light when the associated alarm input is in the alarm state. Unacknowledged alarms will be flashing and any that have been acknowledged will be on solid.

### Relay LEDs

The Relay LEDs light whenever the associated relay is on.

### Voice

The Voice LED is on whenever the B1290 is recording or playing user messages. It flashes when vocabulary messages are being played or when there is an error in the user voices.



### **Tone**

The Tone LED is on for the duration of a transmitted DTMF digit or other generated tone. It will also be on when call progress tones are detected on the phone line. It will flash once for each received DTMF digit.

### **Hook**

The Hook LED comes on whenever the B1290 goes off hook, to dial or answer the telephone. It will flash if a phone port error is detected (no dial tone or other expected call progress signal). The hook LED will also flash during pulse dialing.

### **Run**

The Run LED will be on steady when the B1290 is operating correctly. This LED will flash if an error condition is present.

### **Ring**

When ringing is detected on the telephone line, the Ring LED illuminates. Since answering the telephone is a low priority task to the B1290, it may ignore the ringing if it is processing other tasks (e.g. speaking on the radio).

### **PTT**

The PTT LED will light when the B1290 generates a push-to-talk signal to the radio.

## Operation

This chapter gives a detailed description of exactly how the B1290 will operate after the start-up programming has been completed. Parameters which may be altered are pointed out, with reference to the appropriate Program Code section.

### Alarm Sequence

When the B1290 receives an alarm on one of its inputs, it goes off hook and listens for dial tone. If dial tone is not present, the B1290 will hang up and try again. After three unsuccessful attempts to detect dial tone, the B1290 will conclude there is a problem with the line and stop dialing. When this occurs the unit will report *Telephone Access Error* over the radio, set the error relay and flash the RUN and HOOK LEDs.

If dial tone is detected, the B1290 dials the first telephone number stored in Directory A using tone dialing. When the telephone line is answered, the B1290 will announce its Site ID, the list of any alarms present, and prompt the user to *Enter Acknowledge Code*. It will repeat this message a minimum of three times, pausing five seconds after each announcement to wait for an acknowledgment. When the Acknowledge Code is detected, the B1290 will announce *Alarms Acknowledged* and then prompt "Enter Control Code".

If the line is busy, if there is no answer, or if the B1290 does not receive the Acknowledge Code after announcing the alarm, it will hang up the telephone line, then go off hook again and dial the next number in the directory. If the B1290 dials all the way through the directory without being acknowledged, it will wait two minutes (Interval Timer A), then start dialing again from the top of the directory. After three tries (Times A) at two minute intervals, the B1290 will retry the list every ten minutes (Interval Timer B) thereafter, not stopping until it is acknowledged.

All of the timers and intervals mentioned above are adjustable. In addition, the B1290 may be programmed to announce the alarm a number of times over radio, or a public address system, as well as dialing on the telephone.

### Acknowledging an Alarm

When the B1290 calls you on the telephone, it may take up to five seconds before it starts speaking. After it announces the alarms, it prompts you to *Enter Acknowledge Code*. You have five seconds to begin entering the digits.

If the B1290 has been programmed to operate its relays (Program Code 3, DTMF Codes), you may send a relay code over the telephone before acknowledging the alarms. The B1290 will actuate the relay, speak the associated voice message, then prompt you again to *Enter Acknowledge Code*. After the B1290 has detected the Acknowledge Code, it will speak the

phrase *Alarms Acknowledged* and return to the “Enter Control Code” level. If no activity occurs for 5 seconds it will hang up.

Appending the # digit at the end of the Acknowledge code allows you to acknowledge the alarm for sixty minutes only. After one hour, the B1290 will check the alarm inputs again, and if the same alarm is still present, it will begin the reporting cycle just as if it was a new alarm.

Any series of digits entered immediately after the acknowledge code will be echoed back to the user. This feature is sometimes used in systems applications.

To acknowledge the B1290 locally, activate the local acknowledge switch connected to the unit (see the section on “Installation - Local Acknowledge”). The alarms may be acknowledged at any time. The *Alarms Acknowledged* announcement will occur whenever the B1290 is available to speak.

## Telephoning the B1290

When you call the B1290 on the telephone, it will answer after four rings (Rings before Answer) and announce its site ID, any alarms which are present, and the status of any relays which have been assigned codes. After this announcement, the B1290 will prompt you to *Enter Control Code*. The B1290 then waits ten seconds for you to enter a code. This could be a code to operate one of the relays, an Acknowledge Code, an Interrogate Code, or an Access Code which would allow you to go into the programming mode. If an Access Code (password) has not been programmed, the B1290 will automatically go into the programming mode after five seconds, prompting you to *Enter Program Code*. You may then program the B1290 from your telephone, the same as you would from a local programming phone.

The B1290 will hang up whenever it has waited for more than ten seconds without receiving a DTMF code.

## Changing Telephone Directories

Telephone directories can be changed remotely without entering the programming mode. The directory can be changed by entering the Directory Control Code over the telephone system, local programming telephone, or two-way radio.

Refer to the Directory section, Program Code 2, for a description of the directory format and its uses.

This example uses the local programming phone to change the telephone format from DIRECTORY A to DIRECTORY B and then to DIRECTORY C. A typical installation may use a programming telephone mounted permanently at the site to make this procedure as simple as possible.

B1290: Enter Control Code

YOU:

B1290: Telephone Format is Directory B

YOU:

B1290: Telephone Format is Directory C

It is also common to enter this code using a DTMF keypad over the radio system when the operators at the site change shift.

The B1290 will not allow an empty directory to be selected.

## **Error Messages**

The B1290 will speak error messages when it is called on the phone line, interrogated over the radio port or when the local program phone is used.

### **Hardware Error**

The B1290 speaks *Alert - Site Error* when either the user voices or the vocabulary memory space is corrupt.

### **Database Error**

The B1290 speaks *Alert - Program Error* when either the configuration database is corrupt.

### **Phone Error**

The B1290 speaks *Alert - Telephone Access Error* when there has been a call progress error such as no dial tone during a phone call.

### **Expander Error**

The B1290 speaks *Alert - Expander Error* when a communication error is experienced with an expander.

## Program Codes

### How to Enter the Programming Mode

To begin programming, you must hear the prompt *Enter Program Code* from the B1290. One way to get to this prompt was discussed in the chapter on **Getting Started**. After you have entered the initial voice messages, telephone numbers and an Acknowledge Code, the B1290 will prompt you to begin programming. A local programming phone may be used at any time to alter parameters. It is also possible to program the B1290 remotely by dialing it up over the telephone line.

If you call up a B1290 over the phone once it has been programmed, it will answer after four rings (default) and announce its site ID, any alarms present, the status of the relays (if they have been programmed) and any error status messages. Then it will prompt you to *Enter Control Code*. If the unit has been programmed to operate with a password, you must enter the Access Code at this time. The B1290 will reply with *Program Access* and prompt you to *Enter Program Code*. If an Access Code has not been programmed, the B1290 will time out after five seconds and automatically enter the programming mode. You will hear the prompt *Program Access; Enter Program Code*.

When you connect a local programming phone, the B1290 goes through a similar sequence. It will announce its site ID, any alarms present, the status of any programmed relays and any error status messages. Then it will prompt you to *Enter Control Code*. It is not necessary to know the Access Code to program from the local phone. Wait five seconds, and the B1290 will automatically prompt you with *Program Access; Enter Program Code*.

**IMPORTANT:** Remember that all programming codes must be followed by the “\*\*” code to enter them.

The following chapter, **Programming Reference**, divides the programming parameters into functional blocks. Refer to that chapter to determine the parameter changes required for a specific function.

Appendix C is a **Programming Tree** for the B1290. It gives an overview of the parameters which may be programmed and how they are organized. The Program Codes are explained in detail in the next section.

**Program Code 1 \*\*: Voices**

When you enter Program Code 1, you will hear the following prompt:

B1290: Enter Voice Code

YOU:  *Record Site ID and alarm messages*  
 *Record relay messages*  
 *Erase all messages*  
 *Exit to Enter Program Code prompt*

**1 \*\*: Record Alarm Voices (includes Site ID)**

Record the voice messages associated with the unit (site ID) and each individual alarm point. These are the messages which will be announced over the radio or telephone whenever the alarm is present.

B1290: Site is Ajax Compressor Station

YOU:  *Record*  
 *Quit*  
 *Enter/Next*

Default: empty

If the message is OK, continue by hitting Enter. If you would like to record a new message, enter 2\*\* to record. As soon as you hit the second asterisk of the Enter code, the B1290 will prompt you to record a voice message. When you stop speaking, the B1290 will immediately play back the message that you recorded. Pauses between words may cause the recording to terminate. Repeat as many times as you need until the voice message sounds acceptable. Then hit Enter (\*\*) to proceed, or #\*\* to exit back to the Enter Voice Code prompt.

Entering Next advances to the alarm message section and the first alarm message will be spoken

B1290: Alarm One is ...

YOU:  *Record*  
 *Quit*  
 *Enter/Next*

If you enter messages for all eight alarms, the B1290 will automatically exit to the Enter Voice Code prompt.

Default: empty

**2\*\*\*: Record Relay Voices**

Record the voice messages associated with each relay. Note that the messages will only be announced if the relays have been programmed to operate from a string (see Program Code 3, Relay On/Off Codes). When a relay is operated, the B1290 will speak the voice message followed by the word “On” or “Off” to verify that the action was taken.

In some applications, it is not necessary to have voice confirmation when a relay is operated. To disable this feature, refer to Program Code 6 - Relay Voices.

The B1290 will always announce the condition of the relays when it is called up or interrogated for status.

B1290: Relay Number One is ...

YOU:  *Record*

YOU:  *Quit*

*Enter/Next*

Default: empty

**3\*\*\*: Erase All Voices**

B1290: Enter Voice Empty Code

YOU:  *Erase (exit with any other entry)*

1290: Voice is Empty

*Enter/Next*

**Program Code 2 \*\*: Directories**

There are four directories in the B1290. To allow different alarms to perform different actions when they are active, each alarm can be selected to use any one of the directories. Each directory defines a unique sequence of actions. There is also a Directory Control Code that modifies the directory selection that the alarms are programmed for. When this code is used there are restrictions placed on how the alarms are assigned to directories. There are three possible ways that the directories can be used.

1. If there is No Directory Control Code:

Alarms can be assigned to any of the four directories and will always use the one that has been assigned.

2. If there is a Directory Control Code (method 1):

Alarms can only be assigned Directory A. When the Directory Control Code is received, the directory usage is modified such that the alarms now use the next directory with commands in it. If Directory

B has commands then it will be used. When the Directory Control Code is received again, directory usage advances to the next directory with commands in it.

If all four directories have commands in them, then the Directory Control Code will simply advance to the next directory each time it is received. If the current setting is Directory D when the code is received, then it will return to Directory A.

If the next directory is unused, it will be skipped.

2. If there is a Directory Control Code (method 2):

















If the alarms are assigned only to Directory A and Directory C, when the Directory Control Code is received, all of the alarms that are assigned to Directory A will switch to use Directory B and all of the Alarms assigned to Directory C will switch to use Directory D. When the Directory Control Code is received again, directories A and C will become the active directories.

Alarms cannot be assigned to Directory B or Directory D when this mode of operation is selected.

The directory structure is made up of a list of lines with each line containing a sequence of instructions. The B1290 performs the actions defined in each line then waits for a response. If the expected response is not received, the actions in the next line are carried out

Commands are placed into the directory line-by-line with a series of digits representing the required actions.

Commands that can be used in the directory and the digits used to select them are:

-   0 Dial + digits
-   1 Radio
-   2 Wait + 1-3 digits (seconds)
-   3 Alert
-   4 Two Tone Paging + (4 or 5 digits) + \* + (4 or 5 digits)  
(frequencies in .1 Hz. ie: 12345 would be 1234.5 Hz)
-   5 Five Tone Paging + 5 digits (5 digit cap code)  
or Five Tone Paging + 1digit + \* + 5 digits (preamble+ cap code)
-   6 Single tone + (4 or 5 digits)  
(frequency in .1 Hz. ie: 12345 would be 1234.5 Hz)
-   7 DTMF + 1-16 digits



Voice

Answer

When Program Code 2 is selected the B1290 responds with the prompt:

B1290: Enter Directory

YOU:    *Directory A*

*Directory B*

*Directory C*

*Directory D*

*Help (speaks a summary of commands)*

*Quit*

If one of the directories is selected a typical response would be:

B1290: Directory A, Line One is DIAL 2559544 WAIT 3 SEC VOICE

This is the command sequence in the first line of the directory and would result in the B1290 dialing the number 2559544, waiting for 3 seconds and then speaking the voice messages. At this time the following options are available:

Change this line

Delete this line

Insert a new line before the current line

Quit

Next

YOU:    *Change this line*

B1290: 'beep'

To change the line, a complete sequence of commands and values must be entered. For example, if the setting was to be changed so that the wait time was 5 seconds instead of 3, the entry would be:

YOU:

B1290: Directory A, Line One is DIAL 2559544 WAIT 5 SEC VOICE

Which is the same as [DIAL]2559544 [WAIT]5 [VOICE] for this line in the PC programming software.

For an invalid entry, the B1290 will speak the word "Error" at the end.

YOU:  Delete this line

B1290: 'beep' if the next line in the directory is empty  
or

B1290: Directory A, Line One is DIAL 2559544 DTMF 1234 VOICE

if there is another line in the directory. This was the content of line 2 before the current line was removed. All of the lines move up one line. You can either accept this entry or edit the line.

YOU:  Insert a new line

B1290: 'beep'

YOU:  (new entry)

B1290: Directory A, Line One is DIAL 2559544 VOICE

YOU:  Next

The B1290 advances to the next line in the directory

YOU:  Quit

The B1290 returns to the Enter Directory Code prompt.

Limits: Each phone number may contain up to 39 digits.

Default: Directory A has the single command to turn on the radio and speak the voice messages; the other three directories are empty.

If a pause is required when dialing, use the Wait command to insert a delay interval followed by a DTMF command with more digits. This feature is most often used when communicating with devices which require special signaling, such as paging terminals. The #, or pound digit, has no special meaning and is dialed as a pound.

When calling a paging terminal or someone who cannot acknowledge the call from their phone, it may be useful to wait before starting the next telephone call. This allows the called party to get to a phone and call the B1290 to acknowledge it before it calls out again. To do this, put a Wait command with the required delay on the next directory line and then a Dial command on the following line.

To send a group call with 2 Tone Paging, set tone A equal to tone B.

Do not use the Answer command immediately following a Dial command in the directories when Call Progress is enabled. This is the equivalent of two Answer commands and may result in unreliable operation.

### Program Code 3 \*\*: DTMF Codes

The B1290 is capable of decoding, storing, and transmitting all DTMF codes, including codes received from a 4x4 keypad. Enter \*\*\* to clear a DTMF Code.

B1290: Enter DTMF Code

YOU:    *Acknowledge Code*  
   *Access Code*  
   *Relay On/Off Codes*  
   *Alarm On/Off Codes*  
   *Remote Alarm Input Codes*  
   *Interrogate Code*  
   *Directory Control Code*  
  *Exit to Enter Program Code prompt*

### 1 \*\*: Acknowledge Code

The Acknowledge Code is sent by the called party to indicate that the alarm message has been received. This stops the calling sequence of the B1290.

B1290: Acknowledge Code is ...

YOU:    (  $x = 1$  to 8 DTMF digits )

Default: 1234

### 2 \*\*: Access Code

The Access Code is used as a password to prevent unauthorized callers from altering the programming of the B1290. If an Access Code has been programmed, it must be entered before a telephone caller will receive the *Enter Program Code* prompt. The Access Code is not required for local programming.

B1290: Access Code is ...

YOU:    (  $x = 1$  to 8 DTMF digits, # = clear )

Default: empty

### 3 \*\*: Relay On/Off Input Codes

The relay codes allow users to perform remote control functions at the unattended site. Callers can operate relays on the B1290 by sending DTMF codes from their telephone or radio keypads. Each relay has one code to turn it on and a separate code to turn it off. When a relay is operated, the B1290 speaks a voice message associated with that relay followed by the word "On" or "Off" (see Program Code 1 - Record Relay Voices).

B1290: Relay One On Code is ...

Relay One Off Code is ...

YOU:  (  $x = 1$  to 8 DTMF digits, # = clear )

Default: empty

#### 4 \*\*: Alarm On/Off Output Codes

These codes are used to control DTMF-operated devices at the receiving end when an alarm is reported. A typical example would be sending a message to a pager with a digital display. The DTMF On string is sent during the alarm announcement, preceding the voice announcement for that alarm. The DTMF Off string is sent only over the radio port when the alarm returns to normal, and is not accompanied by a voice message. This feature might be used to turn the lamps of an annunciator panel on or off depending on the condition of the alarm. In simple system applications, the alarm On/Off codes of one B1290 might be programmed to be the same as the relay On/Off codes or remote alarm input codes of another B1290.

B1290: Alarm One On code is ...

Alarm One Off code is ...

YOU:  (  $x = 1$  to 8 DTMF digits, # = clear )

Default: empty

#### 5 \*\*: Remote Alarm Input Codes

If a remote alarm input code has been programmed, when it is received by the B1290 it will be interpreted exactly the same as an alarm on that input. The most common application is to obtain an alarm report from a remote site via radio. The Alarm LED will show the status for remote alarms.

**Do not** connect an alarm signal line to an input that has been programmed with a remote alarm input code.

B1290: Alarm One Remote Alarm Code is ...

YOU:  (  $x = 1$  to 8 DTMF digits, # = clear )

Default: empty

#### 6 \*\*: Interrogate Code

The Interrogate Code is used to find the current status of the B1290. When it receives the code, the unit reports its site ID, any alarms which are present, the status of any relays which have been programmed to operate and any error status messages. Only the voice messages are repeated; no signaling is sent. As the B1290 always announces its status when it is telephoned, this code is used primarily for querying over radio.

B1290: Interrogate Code is ...

YOU:  (  $x = 1$  to 8 DTMF digits, # = clear )  
Default: 5678

### 7 \*\*: Directory Control Code

The Directory Control Code is used to call up the B1290 and change the way that the alarms are using the directories. When it receives the code, the directory usage is modified. If the Directory Control Code is used there are restrictions on what directories are available - refer to Program Code 2 Directories for details.

B1290: Directory Control Code is ...

YOU:  (  $x = 1$  to 8 DTMF digits, # = clear )  
Default: 5678

## Program Code 4 \*\*: Timer Configuration

When you enter Program Code 4, the B1290 will automatically cycle through the following parameters. After the last one, "Times A", it will go back to the *Enter Program Code* prompt.

### Rings Before Answering

When the B1290 is dialed, this parameter sets the number of times it will let the telephone ring before it answers.

B1290: Answer rings is ...

YOU:  no answer  
 number of rings (  $x = 1$  to 8 )  
 answer and automatically acknowledge after 8 rings  
Default: 4 (answer after 4 rings)

If the B1290 is on its own telephone line, it will normally be programmed to answer right away, after one or two rings. However, if the line is shared with other users, it should be programmed to answer after 6 to 8 rings, giving people lots of time to pick up the phone before the B1290 automatically answers.

The # is used when the called parties have dial pulse phones. They cannot acknowledge receipt of an alarm using a code. Instead the B1290 recognizes 8 rings on the telephone line as an Acknowledge Code. In the directory, a Wait command with the required delay, is placed on the line following the Dial command. This gives the called party time to hang up the phone, call the B1290 back and let the phone ring 8 times to acknowledge receipt of the alarm (refer to Program Code 2 - Phone Directory).

**Interval Timer A**

If an alarm is not acknowledged after one pass through the directory, this timer determines how often the B1290 will repeat the reporting sequence.

B1290: Timer A is 2 minutes

YOU:  minutes (  $x = 1$  to 249 )

Default: 2 minutes

**Interval Timer B**

After the Timer A cycle has completed, this timer determines how often the B1290 goes through its alarm reporting sequence.

B1290: Timer B is 10 minutes

YOU:  automatically acknowledge after Interval A  
 minutes (  $x = 1$  to 249 )

0 would be selected if the alarms were announced over a public address system, for example, where there is no way for the alarms to be acknowledged.

Default: 10 minutes

**Cycles Through Timer A (Times A)**

This number determines how many times the B1290 will cycle through its alarm reporting sequence at A intervals before switching to B intervals. With its default settings, the B1290 will try 3 times at 2 minute intervals, then switch to reporting at 10 minute intervals. The switch to the B interval is primarily to conserve air time on busy radio systems.

B1290: Times A is ...

YOU  times (  $x = 0$  to 8 )

Default: 3

**Program Code 5 \*\*: I/O Configuration**

After you enter Program Code 5, the B1290 prompts for the Configuration Code. If you wish to go back to the *Enter Program Code* prompt without going through all of the codes, enter \*\*.

B1290: Enter Configuration Code

YOU:  Alarm Input Setup  
 Using Directory  
 Relay Setup



*Exit to Enter Program Code prompt*






## **1 \*\*: Alarm Input Setup**

### **Alarm Format**

This parameter changes the format of the B1290 alarm inputs to match the output of your monitoring devices in the field. Normally open inputs indicate an alarm when the input is grounded, and when the ground signal is removed, the alarm is interpreted as having cleared. Normally closed inputs are grounded in their normal state, and open when an alarm occurs. Latched inputs recognize a pulse as an alarm. After the pulse has disappeared, the input is deemed to be in the alarm condition until it is acknowledged.

*Note:* A latched alarm should provide a short, predictable pulse to the input of the ProTalk Plus; otherwise, it may have to be acknowledged twice. If the alarm is acknowledged while the input is active, the alarm will not be cleared and new alarms will not activate that input.

B1290: Alarm Format is ...


YOU:  *Normally Open*  
 *Normally Closed*  
 *Normally Open, Latched*  
 *Normally Closed, Latched*  
 *Next*

Default: 0 (normally open)

### **Alarm Timer (Debounce) Timescale**

The debounce timers on the alarm inputs can operate with a resolution of .1 seconds or .1 minutes. When the B1290 speaks 'seconds' for this value it is indicating that the timer is counting in .1 second steps and when it speaks 'minutes' it is counting in .1 minute steps.

B1290: Alarm Timer is seconds

YOU:  *Seconds*  
 *Minutes*  
 *Next*

Default: 0 (seconds)

**Alarm Delay (Debounce)**

This parameter controls the amount of time an alarm must be present before it actually registers as an alarm. This feature is often used to eliminate fleeting alarms, where the device in the field does not present a clean closure to indicate an alarm, but a series of bounces on the contacts. Another example might be to overcome momentary power fluctuations which cause false alarms to be reported. The debounce on each alarm may be individually set.

B1290: Alarm One Delay is \_\_ point \_\_ seconds

YOU:  (  $x = 0.1$  to 19.9 )

The value must be entered in tenths of a second, from 1 to 3 digits. The last digit entered is interpreted as the least significant, i.e. tenths of a second.

Default: 0.5 seconds

**2 \*\*: Using Directory**

B1290: Alarm One is Directory A

YOU:  Off

Directory A

Directory B

Directory C

Directory D

Next

Default: 1 (Directory A)

The selected directory will determine which sequences of actions is performed when this alarm is active. Each alarm can use any directory. If the Directory Control Code is used there are restrictions on what directories should be used - refer to Program Code 2 Directories for details.

**3 \*\*: Relay Setup****Relay Timer Timescale**

The interval timers on the relay outputs can operate with a resolution of 1 second or 1 minute. When the B1290 speaks 'seconds' for this value it is indicating that the timer is counting in 1 second steps and when it speaks 'minutes' it is counting in 1 minute steps.

B1290: Relay Timer is seconds

YOU:  Seconds



*Minutes*

   *Next*

Default: 0 ( seconds)

### Relay On Time

The B1290 has four relays that are turned On with the relay On codes and turned Off with the relay Off codes. The relay timer may be used to turn On a relay for a specified duration and then turn it Off automatically. The timer controls the period of time the relay is On. The interval is programmable from 1 to 199 seconds or from 1 to 199 minutes depending on the setting of the relay timescale. The timers for each relay are programmed separately and operate independently.

Setting the time to zero makes the relay an On/Off type. Setting the timer with the # digit makes the relay operate as a 'special function' output. This function is only available on the main ProTalk Plus unit and not on the expanders. The special functions are:

Relay 1	Unacknowledged Alarm Present
Relay 2	Any Alarm Present
Relay 3	Alarm Acknowledge Received - pulsed when the unit is acknowledged.
Relay 4	Error

B1290: Relay One On Timer is \_\_ seconds

YOU:       *Not timed, uses the Relay Off Code*

   *( x = 1 to 199 )*

   *( Special function )*

Default: 0 (On until turned Off)

### Program Code 6 \*\*: System Settings

When you enter Program Code 6, the B1290 will automatically cycle through the following parameters as you hit Enter (\*\*). When it has completed the whole list, it will return to the *Enter Program Code* prompt.

#### Dial Format

This parameter determines the method of dialing telephone numbers. Tone format dials using DTMF tones (Touch-Tone). Pulse format dials using pulses as a rotary phone would.

B1290: Dial Format is ...

YOU:       *Tone dialing*

*Pulse dialing*

*Next*

Default: 0 (tone dialing)

### **Squelch Polarity**

This setting changes the polarity of the signal used to indicate a busy radio channel.

B1290: Squelch is ...

YOU:    *Busy when the input is low*

*Busy when the input is high*

*Next*

Default: 0 (transmit on high)

### **Relay Voices**

This setting enables or disables the B1290's spoken response to a relay operation. If the B1290 is used in a control situation where monitoring the relay operation is not required, the B1290 would be programmed with the relay voices muted. The B1290 relay voices should be enabled where verification of a relay operation is required.

B1290: Relay is ...

YOU:    *Relay voices are not used*

*Relay voices are used*

*Next*

Default: 1 (voices on)

### **Acknowledge Request**

This setting enables or disables the B1290's voice prompt *Enter Acknowledge Code*. If the alarm announcement is over a public address system, for example, acknowledgment is not possible. The B1290 would be programmed for automatic acknowledge (see Interval Timer B, Program Code 4) and the request for an Acknowledge Code would be disabled.

The B1290 will continue transmitting its alarms until it receives some form of acknowledgment, automatic or otherwise, even if it does not request one.

B1290: Acknowledge Voice is ...

YOU:  *Acknowledge request is not used*  
 *Acknowledge request is used*  
 *Next*

Default: 1 (enabled)

### **Call Progress (Dial Tone Enable)**

This setting enables or disables the feature where the B1290 monitors the audio activity on the phone line when it places a call. If enabled, Call Progress will cause the B1290 to look for dial tone before dialing, watch for a busy signal on the called line and then wait until the called party speaks before the alarm announcement begins. Without Call Progress enabled, the B1290 will perform the dial-out operation and speak regardless of the signals encountered on the phone line.

Do not use the Answer command immediately following a Dial command in the directories when Call Progress is enabled. This is the equivalent of two Answer commands and may result in unreliable operation.

B1290: Dial Tone is ...

YOU:  *Call Progress is not used*  
 *Call Progress is used*  
 *Next*

Default: 1 (enabled)

### **Program Code 7 \*\*: Expanders**

When Program Code 7 is entered, the B1290 gives you the following parameters.

#### **Number of Expanders**

Increase the capacity of a basic B1290 by adding up to 7 expanders, each with an additional 8 alarm inputs and 4 relay outputs.

B1290: Expander Number is . . .

YOU:  *Expanders ( x = 0 to 7 )*  
 *Next*

Default: 0

**Site Voice Enable**

This setting enables or disables the announcement of a site ID from the expander unit. If the expander is being used to increase the number of alarms to be reported from a single site, you probably don't need to announce the site ID again. However, the site ID might be useful to differentiate between alarms from different areas or pieces of equipment.

B1290: Expander Site is . . .

YOU:    *Site voice is not used*

*Site voice is used*

*Next*

Default: 0 (expander site ID disabled)

To program the parameters within the expander, the PGM port on the B1290 is used. Programming is done exactly as though the main unit itself was being programmed, except that the expander number precedes the program code. Refer to Example 10 - Adding an Expander for a specific description of this procedure.

**Program Code 8 \*\*: Reset Database**

This code is used to reset all of the programmed parameters (excluding voices) to their default values.

B1290: Enter Empty Code

YOU:      *Clear Database*

*Next*

Any other entry will leave the database unchanged.

**Program Code 9 \*\*: Audio Levels**

This code is used to adjust audio levels for specific signals. For receive levels the setting should correspond to the level of the signal that is coming from the attached equipment. Receive levels can be in the range between -20 dBm and 0 dBm. For transmit levels the setting determines the amplitude of the signal that will be produced at the output of the B1290. Transmit levels can be set in the range between -20 dBm and 0 dBm. The negative sign is automatically applied to any non-zero value.

The settings for the audio levels are presented in the following order for modification

B1290: Radio Code One is . . . (Radio Transmit Tone Level)

YOU:  Level setting (  $x = 20$  to  $0$  )

Next

Default: 0

B1290: Radio Code Two is . . . (Radio Transmit DTMF Level)

YOU:  Level setting (  $x = 20$  to  $0$  )

Next

Default: 0

B1290: Radio Code Three is . . . (Radio Transmit Voice Level)

YOU:  Level setting (  $x = 20$  to  $0$  )

Next

Default: 0

B1290: Radio Code Four is . . . (Radio Receive Level)

YOU:  Level setting (  $x = 20$  to  $0$  )

Next

Default: 0

B1290: Telephone Code Five is . . . (Telephone Receive Level)

YOU:  Level setting (  $x = 20$  to  $0$  )

Next

Default: 0

## Programming Reference

The ProTalk Plus is capable of performing many functions other than those set by its default values. If you require these extended capabilities, they are accessed through the program codes. If the default operation of the unit as described in the **Getting Started** chapter of this manual is sufficient, then you may ignore this section.

This chapter organizes the programming parameters by their functions. See the chapter on **Program Codes** for more detail on the use and meaning of the referenced parameters.

### 1. Alarm Announcement

This section identifies all of the parameters that determine WHAT is sent when an alarm occurs. By programming these parameters, you may send voice, signaling, and paging tones.

*Directory Used (Program Code 5.2)*

*Directories (Program Code 2)*

*Record Alarm Voices (Program Code 1.1)*

*Alarm On/Off Output Codes (Program Code 3.4)*

*Acknowledge Request (Program Code 6)*

*Speak Messages (Program Code 2)*

### 2. Alarm Operation

This section identifies all of the parameters that determine WHEN an alarm will be announced. By programming these parameters, you control when an alarm is recognized and announced by the ProTalk Plus.

*Alarm Format (Program Code 5.1)*

*Alarm Delay Timebase (Program Code 5.1)*

*Alarm Debounce (Program Code 5.1)*

*Interval Timer A (Program Code 4)*

*Interval Timer B (Program Code 4)*

*Cycles Through Timer A (Program Code 4)*

### 3. Operation Codes

These parameters control how the unit operates. When one of these codes is received, the B1290 performs the required function.

*Acknowledge Code (Program Code 3.1)*

*Access Code (Program Code 3.2)*

*Interrogate Code (Program Code 3.6)*

*Remote Alarm Input Code (Program Code 3.5)*

*Directory Control Code (Program Code 3.7)*

### 4. Relay Control

The parameters required to control a relay are listed here. You may use any number of relays, but the ON/OFF input codes, voice message and relay ON time must be programmed for each relay used. The relay voice code enables or disables the voice confirmation for all relays.

*Relay ON/OFF Control Codes (Program Code 3.3)*

*Record Relay Voices (Program Code 1.2)*

*Relay Timer Timebase (Program Code 5.3)*

*Relay On Time (Program Code 5.3)*

*Relay Voice (Program Code 6)*

*Relay Special Functions (Program Code 5.3)*

### 5. Telephone Specific Parameters

This section describes the parameters used when the unit is required to transmit alarms or signaling over the telephone system.

*Using Directory (Program Code 5.2)*

*Directory Telephone Numbers (Program Code 2)*

*Access Code (Program Code 3.2)*

*Rings Before Answering (Program Code 4)*

*Dial Format (Program Code 6)*

### 6. Radio Specific Parameters

These parameters control the operation of the unit when it is connected to a two-way radio. Refer to the installation section in Getting Started for the required connections to the radio.

*Using Directory (Program Code 5.2)*

*Directory Radio Command (Program Code 2)*

*Squelch Polarity (Program Code 6)*

*Radio Warmup (Program Code 2)*

## **7. Expander Attachment**

When an expander is added to the system, these parameters must be set. They configure the main B1290 unit to accept the expander. The parameters within the expander must also be programmed. Refer to the Advanced Programming Examples for an example of how this is done.

*Number of Expanders (Program Code 7)*

*Site Voice Enable (Program Code 7)*

## **8. Audio Levels**

*Audio Levels (Program Code 9)*



## Programming Examples

### Example 1: Reporting Alarms over Radio and Telephone

In this example, assume that your company has a mobile radio system which is monitored by field personnel. Radio operators have DTMF pads on their mics so they can acknowledge an alarm from the B1290. They would like to have the alarm reported over the radio system three times with a 2 minute interval between transmissions, then dialed out over the telephone if it is not acknowledged. If the alarm is not acknowledged, the B1290 should try again in ten minutes. After six tries at ten minute intervals, the B1290 should switch to trying once an hour. The COS on the radio used with the B1290 gives a high signal when the channel is busy.

B1290: Enter Program Code

YOU:  *Directory Code*

B1290: Enter Directory

YOU:  *Directory A*

B1290: Directory A, Line One is...

YOU:  *Change*

B1290: 'beep'

YOU:  *[RADIO] [VOICE]*

B1290: Directory A, Line One is RADIO VOICE

YOU:  *Next*

B1290: Directory A, Line Two is...

YOU:  *Change*

B1290: 'beep'

YOU:  *[WAIT]120 (seconds)*

B1290: Directory A, Line Two is WAIT 120

YOU:  *Next*

B1290: Directory A, Line Three is...

YOU:  *Change*

B1290: 'beep'

YOU:  *[RADIO] [VOICE]*

B1290: Directory A, Line Three is RADIO VOICE

YOU:   *Next*

B1290: Directory A, Line Four is...

YOU:    *Change*

B1290: 'beep'

YOU:        *[WAIT]120 (seconds)*

B1290: Directory A, Line Four is WAIT 120

YOU:   *Next*

B1290: Directory A, Line Five is...

YOU:    *Change*

B1290: 'beep'

YOU:      *[RADIO] [VOICE]*

B1290: Directory A, Line Five is RADIO VOICE

YOU:   *Next*

B1290: Directory A, Line Six is...

YOU:    *Change*

B1290: 'beep'

YOU:        *[WAIT]120 (seconds)*

B1290: Directory A, Line Six is WAIT 120

YOU:   *Next*

B1290: Directory A, Line Seven is...

YOU:    *Change*

B1290: 'beep'

YOU:              *[DIAL]2559544 [VOICE]*

B1290: Directory A, Line Seven is DIAL 2559544 VOICE

YOU:   *Next*

B1290: Directory A, Line Eight is...

YOU:    *Quit*

B1290: Enter Directory

YOU:  *Quit*

B1290: Enter Program Code

YOU:  *Configuration*

B1290: Answer Rings is 4

YOU:  *Next*

B1290: Timer A is 2 minutes

YOU:  *Enter 10 minutes*

B1290: Timer A is 10 minutes

YOU:  *Next*

B1290: Timer B is 10 minutes

YOU:  *Enter 60 minutes*

B1290: Timer B is 60 minutes

YOU:  *Next*

B1290: Times A is 3

YOU:  *Enter 6 times*

B1290: Times A is 6

YOU:  *Next*

B1290: Enter Program Code

YOU:  *Select System Settings*

B1290: Dial Format is 1

YOU:  *Next*

B1290: Squelch is 0

YOU:  *Enter busy when high*

B1290: Squelch is 1

YOU:  *Next*

B1290: Relay Voice is On

At this point you are finished programming and may hang up the telephone. The directory is programmed with the voice message repeated three times on the radio and then once on the phone line. Another method of programming the radio announcement would be to have an alert tone

followed by the message repeated twice. In this case the entry for each of the radio related commands would be:

B1290: Directory A, Line One is...

YOU: #1 #3 #8 #8 \*\*  
[RADIO][ALERT] [VOICE][VOICE]

B1290: Directory A, Line One is RADIO ALERT VOICE VOICE

Over the telephone, the message will be repeated only once.

If this programming is used, when the B1290 registers an alarm, the reporting cycle will be as follows:

Over radio:      Alert tone  
                    Ajax Compressor Station; Power Failure  
                    Ajax Compressor Station; Power Failure  
                    Enter Acknowledge Code  
                    pause for 2 minutes

                    Alert tone  
                    Ajax Compressor Station; Power Failure  
                    Ajax Compressor Station; Power Failure  
                    Enter Acknowledge Code  
                    pause for 2 minutes

                    Alert tone  
                    Ajax Compressor Station; Power Failure  
                    Ajax Compressor Station; Power Failure  
                    Enter Acknowledge Code  
                    pause for 2 minutes

Over telephone: dial 2559544  
                    Ajax Compressor Station; Power Failure  
                    Enter Acknowledge Code  
                    pause for 5 seconds -waiting for acknowledge code  
                    Ajax Compressor Station; Power Failure  
                    Enter Acknowledge Code  
                    pause for 5 seconds -waiting for acknowledge code

This sequence repeats for 60 seconds.

If the Acknowledge Code is not received over the telephone, the B1290 will wait ten minutes and try the complete sequence again, starting with the radio cycle. If no Acknowledge Code is received after six tries at ten minute intervals, the B1290 will switch to reporting every hour until the alarm is acknowledged.

**Example 2: Dialing from Two Different Telephone Directories**

In this example, the B1290 is programmed to telephone whoever is on call if there is an alarm. The company has two groups of employees which take turns being on call alternate weeks. Instead of reprogramming the B1290 directory every week, two directories are programmed. When the Directory Control Code is received, the B1290 is directed to dial from the other directory. The directory may be switched with the Directory Control Code over the telephone, local programming phone, or two-way radio. There are specific rules governing how the alarms can be assigned to directories if the Directory Change Code is used. Refer to Program Code 2 Directories for more information concerning these rules. This example starts by setting the telephone numbers in the two directories.

B1290: Enter Program Code

YOU:  *Directory Code*

B1290: Enter Directory

YOU:  *Directory A*

B1290: Directory A, Line One is...

YOU:  *Change*

B1290: 'beep'

YOU:   
[DIAL]2559544 [VOICE]

B1290: Directory A, Line One is DIAL 2559544 VOICE

YOU:  *Next*

B1290: Directory A, Line Two is...

YOU:  *Change*

B1290: 'beep'

YOU:   
[DIAL]2559598 [VOICE]

B1290: Directory A, Line Two is DIAL 2559598 VOICE

YOU:  *Next*

B1290: Directory A, Line Three is...

YOU:  *Quit*

B1290: Enter Directory

YOU:  *Select Directory B*

B1290: Directory B, Line One is...

YOU:  *Change*  
B1290: 'beep'  
YOU:   
[DIAL]7664422 [VOICE]  
B1290: Directory B, Line One is DIAL VOICE  
YOU:  *Next*  
B1290: Directory B, Line Two is...  
YOU:  *Change*  
B1290: 'beep'  
YOU:   
[DIAL]7668901 [VOICE]  
B1290: Directory B, Line Two is DIAL 7668901 VOICE  
YOU:  *Next*  
B1290: Directory B, Line Three is...  
YOU:  *Quit*  
B1290: Enter Directory  
YOU:  *Quit*

The telephone numbers have now been programmed. Now enter the Directory Control Code

B1290: Enter Program Code  
YOU:  *DTMF Codes*  
B1290: Enter DTMF Code  
YOU:  *Directory Control Code*  
B1290: Directory Control Code is...  
YOU:  *Enter Control Code*  
B1290: Directory Control Code is 78  
YOU:  *Next*  
B1290: Enter Program Code

Right now the B1290 is programmed with dialing commands in Directory A and Directory B. Any alarms that are to be switched between these two directories should be programmed to use Directory A or the control code will have no effect. Each alarm has its own setting for the directory it is using. Make sure that the alarms you want to have changed are set properly.

YOU:  *Select Configuration*

B1290: Enter Configuration Code

YOU:  *Select Using Directory*

B1290: Alarm One is Directory is...

YOU:  *Select Directory A*

B1290: Alarm One is Directory is A

YOU:  *Next*

Repeat this for all of the alarms

When you wish to dial from the B directory, call up the B1290 and follow these steps:

B1290: Enter Control Code

YOU:  *Directory Control Code*

B1290: Telephone Format is Directory B

And to change it back:

B1290: Enter Control Code

YOU:  *Directory Control Code*

B1290: Telephone Format is Directory A

### **Example 3: Different Alarms Dialing Different Telephone Numbers**

A B1290 is used in an application where there are two different types of related alarms. Some are building alarms, such as intrusion alarms, building temperature, power failure, etc. Others are alarms relating to specific equipment failures, such as compressor failure, high tank level or sump overflow. It is desirable to have the maintenance personnel alerted if there is a building alarm, but if there is a problem with the equipment, it would be preferable to alert the operations technicians.

In this example, alarms 1 and 2 are connected to intrusion alarm and building high temperature respectively. These are building alarms, and are to dial the building maintenance people at 255-9544 and then 255-9598. Compressor failure and high tank level are fed to alarms 3 and 4. Since these are equipment problems, operations technicians at 766-4422 and then 766-8901 are to be alerted. Follow the previous example to enter the telephone numbers in Directory A and Directory B then set the alarms to use these two directories

B1290: Enter Program Code

YOU:  *Select I/O Configuration*

B1290: Enter Configuration Code

YOU:  *Select Using Directory*

B1290: Alarm One is Directory...

YOU:  *Select Directory A*

B1290: Alarm One is Directory A

YOU:  *Next*

B1290: Alarm Two is Directory...

YOU:  *Select Directory A*

B1290: Alarm Two is Directory A

YOU:  *Next*

B1290: Alarm Three is Directory A

YOU:  *Select Directory B*

B1290: Alarm Three is Directory B

B1290: Alarm Four is Directory A

YOU:  *Select Directory B*

B1290: Alarm Four is Directory B

YOU:  *Quit*

The B1290 is now programmed to dial Directory A when alarms 1 or 2 occur, and Directory B when alarms 3 or 4 occur.

#### **Example 4: Actuating Relays**

In this example, when you receive the alarm “High Pressure” from the B1290, you would like to be able to operate a bypass valve for up to ten minutes. The valve can be controlled by one of the relays on the B1290 using Relay On and Relay Off codes.

B1290: Enter Program Code

YOU:  *Select Voices*

B1290: Enter Voice Code

YOU:  *Select Relay Voices*

B1290: Relay One is...

YOU:  *Change*

B1290: beep-beep



YOU: *Bypass Valve*

B1290: Relay One is Bypass Valve

YOU:   *Next*

B1290: Relay Two is...

YOU:    *Quit*

B1290: Enter Voice Code

YOU:    *Quit*

B1290: Enter Program Code

YOU:    *Select DTMF Codes*

B1290: Enter DTMF Code

YOU:    *Select Relay On and Off Codes*

B1290: Relay One On Code is empty

YOU:     (pause)   *Enter On code*

B1290: Relay One On Code is 555\*

YOU:   *Next*

B1290: Relay One Off Code is empty

YOU:       *Enter Off code*

B1290: Relay One Off code is 555#

YOU:   *Next*

B1290: Relay Two On Code is empty

YOU:   *Next*

B1290: Relay Two Off Code is empty

And so on until all of the Relay Codes are done...

B1290: Enter DTMF Code

YOU:   *Next*

B1290: Enter Program Code

YOU:    *I/O Configuration*

B1290: Enter Configuration Code

YOU:    *Next*

B1290: Relay Timer is seconds

YOU:  *Select minutes for the timebase*

B1290: Relay Timer is minutes

YOU:  *Next*

B1290: Relay One On Timer is 00 minutes

YOU:  *Select 10 minutes for the time*

B1290: Relay One On is 10 minutes

YOU:  *Next*

B1290: Relay Two On timer is 00 minutes

At this time you are finished programming and can hang up the phone.  
When the B1290 calls you with an alarm, the sequence will be as follows:

B1290: Ajax Compressor Station; High Pressure.

Enter Acknowledge Code

YOU:  *Send the Relay On Code*

Ajax Compressor Station;

Bypass Valve On (and Alarm - Enter Acknowledge Code).

YOU:  *Send the Acknowledge Code*

B1290: Ajax Compressor Station;

Alarms Acknowledged

### **Example 5: Operating a Radio Pager**

In this example, when an alarm is received you want to contact the person on call, who is carrying a two-tone radio pager which operates on the company's private radio system. If the person does not call back to acknowledge the alarm, you want the B1290 to start dialing telephone numbers.

B1290: Enter Program Code

YOU:  *Directory Code*

B1290: Enter Directory

YOU:  *Directory A*

B1290: Directory A, Line One is...

YOU:  *Change*

B1290: 'beep'

YOU:

[*RADIO*][*2TONE*]855.5/1433.4 [*VOICE*]

B1290: Directory A, Line One is RADIO 2 TONE 855.5 Hz 1433.4 Hz  
VOICE

YOU:  Next

B1290: Directory A, Line Two is...

YOU:  Change

B1290: 'beep'

YOU:

B1290: Directory A, Line Two is DIAL 2559544 VOICE

YOU:  Next

B1290: Directory A, Line Three...

You are finished programming and may hang up the phone.

#### Example 6: Dialing a Paging Terminal

In this example, rather than using a private radio system, the company's employees utilize a city-wide paging service. Normally when you dial the paging terminal, you are prompted to enter your own telephone number. Your number is then displayed on the digital read-out of the pager, so the paged party knows what number to call back. We are going to program the B1290 to call this paging terminal when it reports an alarm.

B1290: Enter Program Code

YOU:  Directories

B1290: Enter Directory

YOU:  Directory A

B1290: Directory A, Line One is...

YOU:  Change

B1290: 'beep'

YOU:

[*DIAL*]2559544 [*WAIT*]4 [*DTMF*]734

B1290: Directory A Line One is DIAL 2559544 WAIT 4 seconds  
DTMF 734

YOU:  Next

You are finished programming and may hang up the phone.

When an alarm occurs, the B1290 will dial the number of the paging terminal, 255-9544; wait for the terminal to answer, wait 4 seconds while the terminal is prompting, then send the DTMF string 734 which represents the calling site. Any alarm will result in the paging message 734.

If you want to distinguish between one alarm and another, use the Alarm On Codes that can be assigned to each input.

B1290: Enter Program Code

YOU:  *DTMF Codes*

B1290: Enter DTMF Code

YOU:  *Select Alarm On/Off Codes*

B1290: Alarm One On Code is...

YOU:  (pause)  *Code for alarm 1*

B1290: Alarm One On Code is **\*1\***

YOU:  *Next*

B1290: Alarm One Off Code is...

YOU:  *Next*

B1290: Alarm Two On Code is...

YOU:  (pause)  *Code for alarm 2*

B1290: Alarm Two On Code is **\*2\***

YOU:  *Next*

With this Alarm ON code programmed, the DTMF string **\*1\*** will be sent immediately preceding the alarm one message when alarm one is active. The message displayed on the pager will be: 734**\*1\***

The string **\*2\*** will be sent with alarm two.

In this example, the same result could have been achieved by sending 734 as part of the alarm ON DTMF code. The 734 is included as part of the telephone number and is sent with every alarm. It appears much like a site identifier.

This example also assumes that the pager could be dialed directly. Sometimes a separate number for the pager must be dialed after the number for the paging terminal. In that case, you might need to insert another delay, and there might not be room to include the site identifier as part of the telephone number.

Another way the B1290 could be programmed to dial a paging terminal would be to make the alarm On DTMF code the same as the telephone num-

ber of the B1290. The telephone number would then be displayed on the pager, and the called party would receive the alarm message when he called the B1290 back. The B1290 would have to be programmed to wait some time for an acknowledgment before it continued dialing.

### **Example 7: Announcing Alarms over a Public Address System**

In this example, the B1290 is used to announce alarms from an unattended location over a building's public address system. You want the alarms to be announced twice, repeated again one minute later then repeated for the last time one minute after this. To make the process stop after the third repetition, program Timer B to zero. A zero value in Timer B means that the alarm is automatically acknowledged after A Times.

Connect the radio port, TX Audio and PTT, from the B1290 to the PA inputs.

Starting with the timer setup.

B1290: Enter Program Code

YOU:

B1290: Answer Rings is 4 (No effect on operation)

YOU:   Next

B1290: Timer A is 2 minutes

YOU:    *Change the timer to 1 minute*

B1290: Timer A is 1 minutes

YOU:   Next

B1290: Timer B is 10 minutes

YOU:    *Change the timer to zero*

B1290: Timer B is 0 minutes

YOU:   Next

B1290: Times A is 3

YOU:    *Change the times A to 2*

B1290: Times A is 2

YOU:   Next

The timers are now set, now put the commands into the directory.

B1290: Enter Program Code

YOU:    *Directory Code*

B1290: Enter Directory

YOU:  *Directory A*

B1290: Directory A, Line One is...

YOU:  *Change*

B1290: 'beep'

YOU:      
*[RADIO][ALERT][VOICE][VOICE]*

B1290: Directory A, Line One is RADIO ALERT VOICE VOICE

YOU:  *Next*

B1290: Directory A, Line Two is..

YOU:  *Quit*

B1290: Enter Directory

YOU:  *Quit*

*Now remove the acknowledge request prompt.*

B1290: Enter Program Code

YOU:

B1290: Dial Format is Zero

YOU:  *Next*

B1290: Squelch is 0

YOU:  *Next*

B1290: Relay voice is On

YOU:  *Next*

B1290: Acknowledge Voice is On

YOU:

B1290: Acknowledge Voice is Off

YOU:  *Next*

B1290: Dial Tone is on

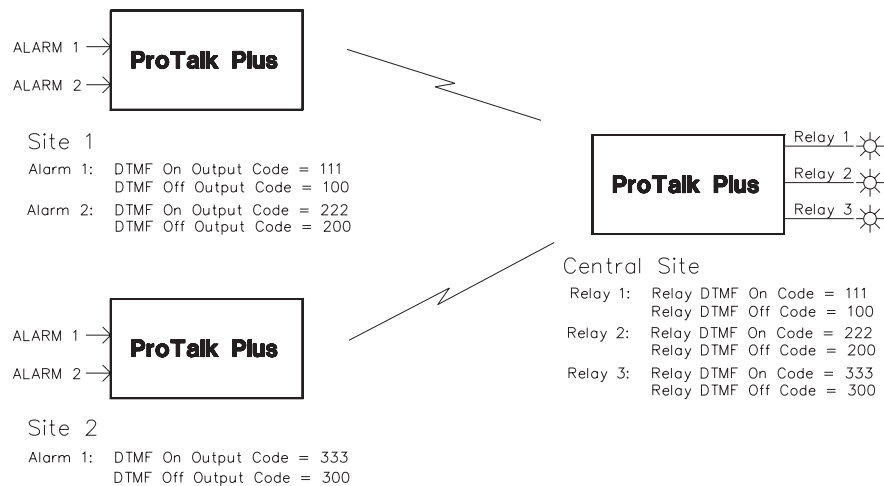
At this point you are finished programming and may hang up.

YOU:  *Next*

**Example 8: Activating an Annunciator Panel**

In this system application, a B1290 is used to report alarms from a number of remote locations by turning the lamps of an annunciator panel on and off.

Figure 6 shows a system where two remote sites are transmitting DTMF codes to a central site. The Alarm On code associated with the remote alarms is the same as the Relay On code at the central site. Similarly, the Alarm Off codes at the remote locations are the same as the Relay Off codes at the central site.



**Figure 6 Activating an Annunciator Panel**

When a remote alarm occurs, the DTMF code for that alarm is transmitted to the central site. On receiving this code, the central site activates the relay associated with that alarm. When the alarm clears, the Off code is transmitted from the remote, and the central site's associated relay is released.

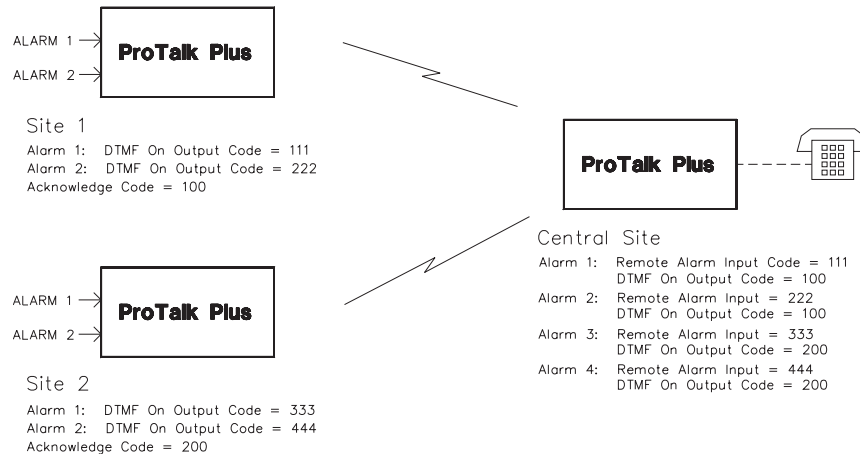
**Example 9: Concentrating Alarms from Remote Sites**

In the following example, a number of remote sites report their alarms over radio to a B1290, which concentrates the alarms and reports them over the telephone.

Figure 7 is an example of two remote sites communicating with a central site to have their alarms announced over the telephone. At the remote site, the B1290s are programmed to operate over radio. They are programmed with an alarm On output code and an Acknowledge Code. At the central

site, the B1290 is programmed to accept remote alarm inputs on alarms 1, 2, and 3, and is connected to a telephone.

When one of the remote units is alarmed, it will send its alarm ON output



**Figure 7 Concentrating Remote Alarms**

code over the radio. This code will be interpreted as a remote alarm input code at the central unit. This will initiate the B1290 to send its alarm report over radio and telephone. As part of its alarm sequence over radio, the B1290 will send its alarm On output code. This code will be interpreted as an acknowledgment by the remote, and it will stop sending the alarm. The central unit will continue to report over radio and telephone until it is acknowledged.

#### **Example 10: Adding an Expander**

In this example, you are adding an expander to a B1290 to increase the number of alarm inputs and relay outputs.

Install and program the main B1290 unit as per the instructions in this manual. Install the expander in a location very close to the B1290. Complete the wiring to all the alarms and relays. Connect the cable supplied with the expander from the auxiliary connector on the B1290 to the SERIAL IN connector on the expander. Apply power to the installation

The expander is programmed from the B1290. Note that when the Program Code is entered, it is preceded by the number of the expander.



B1290: Enter Program Code

YOU:  *Expanders*

B1290: Expander Number is 0

YOU:  *Enter 1 for the number of expanders*

B1290: Expander Number is One

YOU:  *Next*

B1290: Expander Site Voice is 0 (default is not to announce the expander ID)

YOU:  *Next*

B1290: Enter Program Code

YOU:  *Expander 1, Voices*

B1290: Enter Voice Code

YOU:  *Record Alarm Voices*

B1290: Expander One Site is...

YOU:  *Next (Site ID is disabled - don't need a voice message)*

B1290: Expander One, Alarm One is...

YOU:  *Change this voice*

B1290: beep-beep

YOU: *Intrusion*

B1290: Expander One, Alarm One is Intrusion

YOU:  *Next*

B1290: Expander One Alarm Two is...

YOU:  *Change this voice*

B1290: beep-beep

YOU: *High Temperature*

B1290: Expander One, Alarm Two is High Temperature

YOU:  *Next*

B1290: Expander One, Alarm Three is...

Continue programming in the normal fashion, remembering to enter the number of the expander before the Program Code. Only the voices MUST

be programmed; the other parameters have their standard defaults. Not all parameters are accessible in the expander. The following is a list of those which may be programmed:

- Voices
- Relay On/Off codes
- Alarm On/Off codes
- Remote alarm input codes
- Alarm format
- Relay On time
- Alarm delay (debounce)
- Expander Site ID enable

If you try to change any other parameters, the B1290 will announce *Error*. To solve this problem, define all of the expanders in the system in the B1290 using program code 7 (number of expanders).

To change the Alarm On code for the first alarm on the second expander, you would program the following (the example assumes that the number of expanders has already been set to 2 as shown above):

B1290: Enter Program Code

YOU:  *Expander 2, DTMF Codes*

B1290: Enter DTMF Code

YOU:  *Alarm On/Off Output codes*

B1290: Expander Two Alarm One On Code is Empty

YOU:  Enter code 9678

B1290: Expander Two Alarm One On Code is 9678

YOU:  *Next*

etc.

## Troubleshooting

**Problem: I've hooked up the B1290 as per the installation instructions but nothing happens.**

- Use a voltmeter to check that the power supply is properly connected. If an AC adapter is being used, it should have an output of at least 12 volts DC with a center-negative power connector. If the DC power source is connected to the RADIO terminal block, it should have the positive lead connected to terminal 8 and the negative lead to terminal 7.
- Do not attach power to both inputs at the same time.

**Problem: The B1290 will not program from a local programming phone.**

- If you do not hear the voice prompt to begin programming, check that the programming phone is plugged into the PGM jack and not the PHONE jack.
- If you hear the voice prompt to begin programming, but the B1290 does not register your entries, check that you are using a tone phone. Sometimes a pushbutton phone actually sends dial pulses rather than DTMF. You can tell the difference by listening in the earpiece; pulse dialing sounds like clicking, DTMF like tones.
- Check for the TONE LED on the front panel when a digit is being received. Some phones send short bursts of tone rather than continuous tone while the key is depressed. If the B1290 is not detecting DTMF, try another phone.
- Check the setting of the receive level for the phone port. Since it is not possible to do this using the programming phone, it will have to be done with the programming software.
- Disconnect the RX input from the radio. Audio received from this input is summed with the audio from the programming phone. If noise is being received, it will affect the decoding of tones and the programming of the voices. The RX input should always be connected to squelched audio.

**Problem: The B1290 does not dial out over the telephone line when an alarm occurs.**

- Check that the phone line is plugged into the correct jack. The jack labeled PGM is for a local programming phone; the telephone line should be plugged into the PHONE jack.
- Check that the telephone is dialing from the correct directory (Program Code 2). The B1290 has four separate directories: A, B, C and D. Check that the telephone numbers are entered correctly in the selected directory, and that the directory is not empty.

- Check that an alarm is actually present, as indicated by the LEDs on the front panel. In its default condition, the B1290 expects to see a closure to ground at the alarm input. If your alarm inputs are normally closed contacts which open on an alarm condition, this parameter may be adjusted using Program Code 5. The debounce can also be set in this section. This parameter may be set to delay reporting an alarm until it has been present for a certain number of seconds, in which case it will not recognize a momentary closure.

**Problem: The B1290 waits a long time before announcing the alarm over the radio.**

- The B1290 will wait for one minute when the COS input is busy and then transmit anyway. This is done to ensure that an open squelch on the radio does not disable the reporting operation. Check the Squelch Polarity setting to make sure that it matches the operation of the radio's COS output. If the COS input to the B1290 is left open the Squelch Polarity should be set to 0 using Program Code 6.

- Check the alarm delay (debounce) parameter using Program Code 5. If a delay has been programmed, the B1290 will wait until the alarm has been present for that interval before reporting it.

- Check the directory programming to make sure that there is not an unwanted Wait command present.

**Problem: The B1290 continues dialing even after the alarms have been acknowledged.**

- The most common cause of this problem is fleeting alarms. They occur when the device reporting an alarm to the B1290 gives a series of pulses on the contacts instead of a clean closure. If the problem cannot be corrected in the field wiring, one option is to "debounce" the alarms using the B1290 alarm delay parameter using Program Code 5. When this value is set, contacts must be closed for a specific period of time before they are recognized as alarms.

- Check if any new alarms are announced when the B1290 continues to dial after it has been acknowledged. Sometimes alarms at a remote site are related, occurring in a chain reaction from a single cause. The B1290 will start dialing when it receives the first alarm, but if another alarm occurs in the meantime, it will keep dialing until all the alarms are acknowledged.

**Problem: The B1290 won't answer the phone.**

- Check that the phone line is plugged into the PHONE jack and not the PGM jack.

- Check that the phone line is using the inner red/green pair, and not the outer black/yellow pair (normally reserved for line 2).

- Check that the B1290 is configured to answer the phone, using Program Code 4. If the number of rings before answering is set to 0, the B1290 will never answer the phone.
- Answering the telephone will not occur if the B1290 is engaged in any of these activities: speaking on the radio, in local programming mode and when it is using the phone line to call out. Counting of rings only begins once the unit is in its idle state.
- Check that the ringing voltage on the telephone line exceeds 40 VAC at 20 Hz. The RING LED located on the front panel will indicate if proper ringing voltage is being received.
- Check that the telephone line has a standard ringing cadence of two seconds on, four seconds off. If the ringing cadence is greatly different, it may not be detected.

**Problem: The B1290 will not acknowledge.**

- Check that you are sending the correct digits. The acknowledge code can be changed using Program Code 3.
- If the B1290 is not acknowledging over radio, it may be necessary to adjust the receive level setting for the radio port.
- If the B1290 is not acknowledging over the telephone line, it may be necessary to adjust the receive level setting for the phone port.
- Check that the TONE LED on the front panel of the B1290 lights when a DTMF digit is received.

**Problem: The B1290 does not activate its relay when I send the DTMF On code.**

- Check that you are sending the right digits. The relay On/Off codes can be changed by using Program Code 3.
- Check the relay On time using Program Code 5. If the setting is 0, the relay will stay On until it is commanded Off. For any other setting, the relay will only operate for the programmed number of seconds.
- If the relays do not operate from codes sent over the radio, it may be necessary to adjust the receive level setting for the radio port.
- If the relays do not operate from codes sent over the telephone, it may be necessary to adjust the receive level setting for the phone port.
- Check that the TONE LED on the front panel of the B1290 lights when a digit is received.

**Problem: Our operators live in an area which has a dial pulse exchange. How can they acknowledge the B1290 when it calls?**

- Even though the operators have rotary phones, they can still send tone codes if they have a DTMF pad, purchased separately, which sits by the phone.

- The B1290 may be programmed to automatically acknowledge after eight rings. Thus if the B1290 calls an operator with a dial pulse phone, the operator can hang up after he hears the message, call the B1290 right back, let the phone ring eight times, and the B1290 will recognize that as an acknowledgment. Set the number of rings before answering to # in the Configuration section (Program Code 4), and put a Wait command in the next directory line to allow time for them to call the B1290 back.

**Problem: How can I prevent unauthorized personnel from calling up the B1290 and altering its programming?**

- In its default condition, the B1290 does not require any type of password. If you wish to enter one, refer to the Access Code in the DTMF Codes section (Program Code 3). If an Access Code is programmed, anyone calling the B1290 will receive a report of its status, but it will prompt the caller to enter the Access Code before allowing them into the programming mode.

**Problem: Can I use the \* character as part of my DTMF strings? Won't this be confused with the "Enter" code?**

- The # and \* characters may be used as a part of any programmable DTMF string. The only time you must be careful is when entering an asterisk (\*) as the last digit in a string. Be sure to wait more than one second after entering the last digit before hitting Enter (\*\*); otherwise the last \* will be interpreted as part of the Enter code.

**Problem: The B1290 has lost its programming.**

- As it runs, the B1290 is constantly performing internal self-checks, and on rare occasions it may find that a memory location has been corrupted. If that happens, the B1290 resets all programmed parameters (except the voice messages) to the default values. At the same time, it will announce *Program Code Error* over the radio. As the telephone directories have been lost, the B1290 cannot dial out to report the failure over the phone. The only way you will be able to tell that something has gone wrong is by phoning the B1290; it will announce a *Program Code Error* as soon as it answers the phone. In order to have some local indication that an error has occurred, hook a local speaker into the radio connections.

The most common causes of a memory loss are power spikes which enter the board through the power, ground, telephone line, or radio connections.

**Problem: I tried to change the telephone numbers and now the B1290 will not dial out at all.**

- Check the programming for Directory A to be sure that the correct command sequence is entered. If a Directory Control Code is being used, make sure that the B1290 has not been changed to a directory that disables the alarm reporting. This would be the case where a directory contains the single Wait command or possibly commands for only the radio port.

## Warranty Statement

Barnett Engineering Ltd. warrants that all equipment supplied shall be free from defects in material or workmanship at the time of delivery. Such warranty shall extend from the time of delivery for a period of one year. Buyer must provide written notice to Barnett Engineering Ltd. within this prescribed warranty period of any defect. If the defect is not the result of improper usage, service, maintenance, or installation and equipment has not been otherwise damaged or modified after delivery, Barnett Engineering Ltd. shall either replace or repair the defective part or parts of equipment or replace the equipment or refund the purchase price at Barnett Engineering Ltd.'s option after return of such equipment by buyer to Barnett Engineering Ltd. Shipment to Barnett Engineering Ltd.'s facility shall be borne on account of buyer.

(1)Consequential Damages: Barnett Engineering Ltd. shall not be liable for any incidental or consequential damages incurred as a result of any defect in any equipment sold hereunder and Barnett Engineering Ltd.'s liability is specifically limited to its obligation described herein to repair or replace a defective part or parts covered by this warranty.

(2)Exclusive Warranty: The warranty set forth herein is the only warranty, oral or written, made by Barnett Engineering Ltd. and is in lieu of and replaces all other warranties, expressed or implied, including the warranty of merchantability and the warranty of fitness for particular purpose.



## Specifications

<b><i>Alarm Inputs</i></b>	8, optically isolated, 2mA to operate, ground closure required.
<b><i>Control Outputs</i></b>	4 independent form C outputs controlled by programmable codes or used as special function outputs. Rated: 1 Amp at 30 Volts
<b><i>Telephone Connection</i></b>	RJ11; tone or pulse line.
<b><i>Programming Connection</i></b>	RJ11; accepts a standard telephone.
<b><i>Receive Audio</i></b>	-20 dBm to 0 dBm, 10 k ohm impedance; unbalanced, AC coupled.
<b><i>Transmit Audio</i></b>	-20 dBm to 0 dBm, 600 ohm impedance, unbalanced, AC coupled.
<b><i>Channel Busy (COS)</i></b>	Ground closure.
<b><i>PTT</i></b>	Open collector, 25 V max, 150 mA max.
<b><i>Acknowledge Input</i></b>	Ground closure.
<b><i>Voice Quality</i></b>	Digitized, toll quality, 32 kbps.
<b><i>Power</i></b>	+11.5 VDC to +28 VDC, 100 mA standby current, 10 mA per active relay.
<b><i>Environment</i></b>	-40°C to + 60°C, 95% relative humidity, non-condensing.
<b><i>Physical</i></b>	6.5" x 8.5" x 2" Plug-in terminals
<b><i>Approvals</i></b>	FCC Part 68, FCC Part 15 - Class A, Industry Canada CS-03 Part I Issue 7, CSA C22.2 No 60950-00 / UL 60950, 3rd Edition

## Appendix A - Programmable Features

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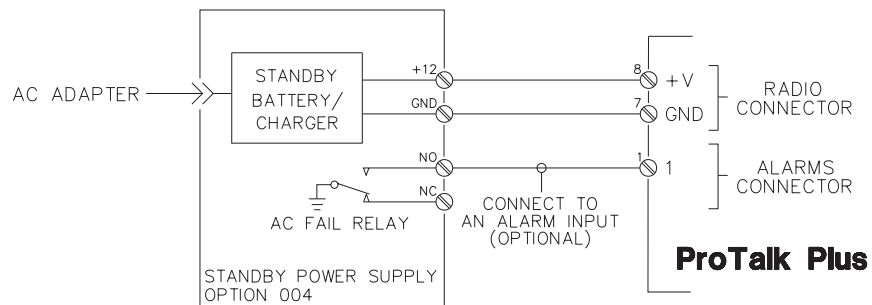
Alarm Messages	Unique Site ID plus individual messages for each input. Message length is variable
Alarm Polarity	Selects NO or NC input format
Alarm Latch	Latches fleeting alarm inputs
Alarm Debounce	Selects the delay time before a change of state on the input is valid. Range is 0.1 to 19.9 in either seconds or minutes
Alarm Directory	Selects one of four directories that contain command actions to be taken when the alarm is active.
Interval Timer	Two stage timer that uses 'A' interval 'A' times before switching to 'B' interval. Both 'A' and 'B' interval are adjustable up to 249 minutes.
Acknowledge Code	Stops the reporting sequence: 1 to 8 digits
Interrogate Code	Speaks alarms and relay state: 1 to 8 digits
Alarm On/Off Output Codes	Sent when an alarm becomes active (on) or when it returns to normal (off). Different codes for each alarm. 1 to 8 digits
Remote Alarm Input Codes	Simulate an alarm condition when received. Different codes for each alarm. 1 to 8 digits
Directory Control Code	Changes the alarms to use different directories; also referred to as shift change. Two modes are available: one where all alarms are assigned to Directory A and can be controlled to alternately use the other three directories and another where Directory A alternates with Directory B and Directory C alternates with Directory D.
Directory Commands	Each directory can have up to 20 lines of command sequences. The commands are executed when an alarm using the directory is active. The commands are: <ul style="list-style-type: none"> <li>▶ Dial - phone the programmed number.</li> <li>▶ Voice - Speak the alarm messages</li> <li>▶ Radio - turn on the radio transmitter</li> <li>▶ Wait - Insert a pause: 1 to 249 seconds.</li> <li>▶ 2 Tone - send a two tone page</li> <li>▶ 5 Tone - send a five tone page</li> </ul>

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	<ul style="list-style-type: none"> <li>▶ 1 Tone - send a single tone</li> <li>▶ Alert - send a beeping tone</li> <li>▶ DTMF - send a string of digits</li> <li>▶ Answer - monitor the call progress signals and wait for the called party to speak before announcing the alarm message.</li> </ul>
Access Code	Password for dial-up access to programming: 1 to 8 digits
Acknowledge Request	The acknowledge request at the end of the alarm annunciation can be disabled for use with public address systems.
Number of Rings	Sets the number of rings before the B1290 will answer the line: 1 to 8 rings or never.
Squelch Polarity	Sets the radio busy monitor to either high or low when busy.
Relay Voices	Voice messages that are returned when a relay is operated.
Disable Relay Voices	Relay voices are not spoken.
Relay On/Off Codes	DTMF codes that turn the relay on and off. Independent for each relay: 1 to 8 digits
Relay Timer	Makes the relay a timed type where it will remain on for the specified time after the On code is received. Range is 1 to 199 in either seconds or minutes
Relay Special Function	<p>These automatic functions can be assigned to the relays:</p> <ul style="list-style-type: none"> <li>▶ Relay 1: New (unacked) alarm on</li> <li>▶ Relay 2: Any alarm on</li> <li>▶ Relay 3: Alarm acknowledged (timed)</li> <li>▶ Relay 4: Error</li> </ul>
Pulse Dial	Forces dialing to be pulse instead of tone.
Number of Expanders	Sets the number of connected expanders.
Disable Expander ID	Stops the site ID in the expander from being spoken.
Audio Levels	Sets the gain for audio signals in the B1290

## Appendix B - Options

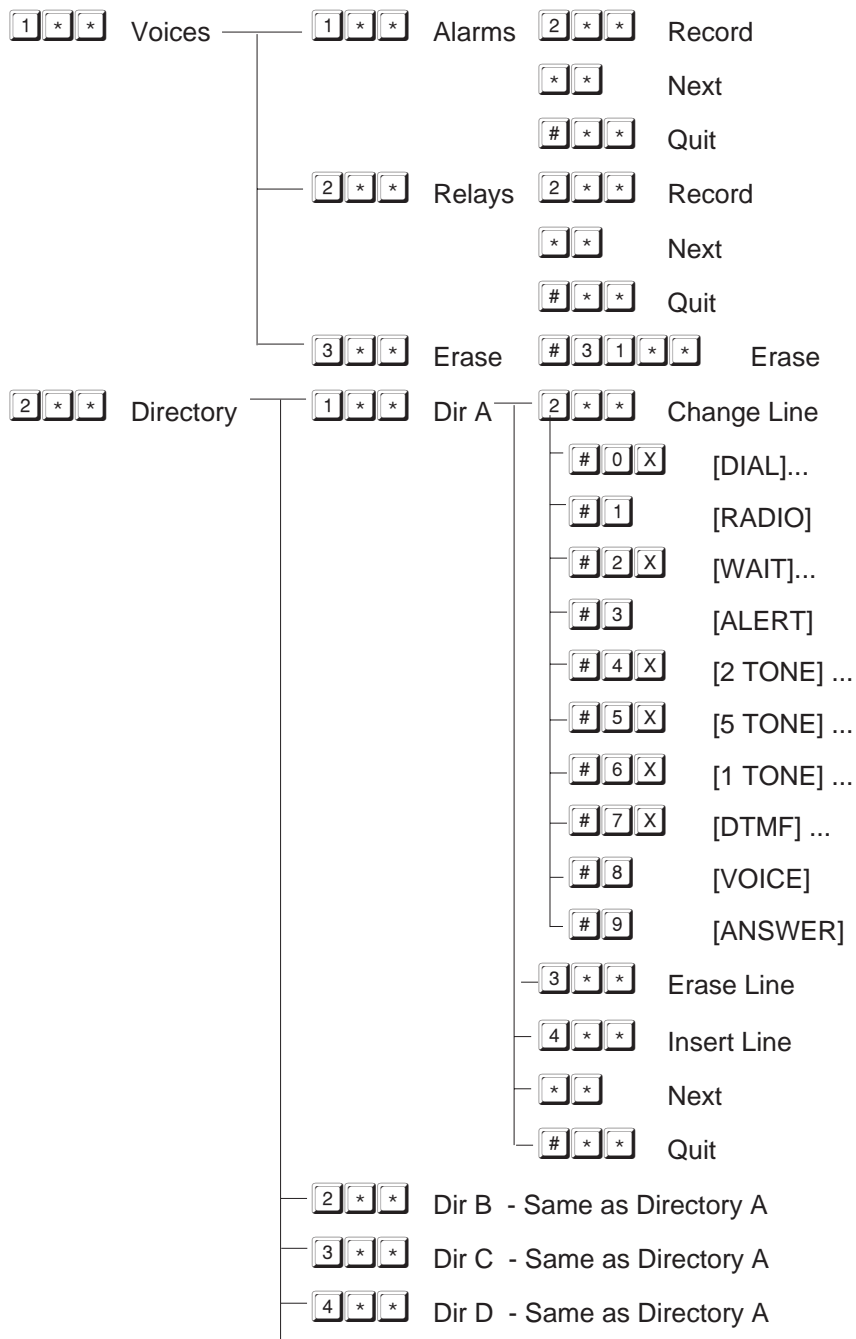
B1256	AC Adapter
B1292	Expander module. Adds 8 inputs and 4 relays. Maximum of 7 expanders
Option 004	External power pack with 120 VAC power supply, sealed battery and charger. 12 hour capacity in standby. Connection of the Option 004 power supply is shown in Figure 8.

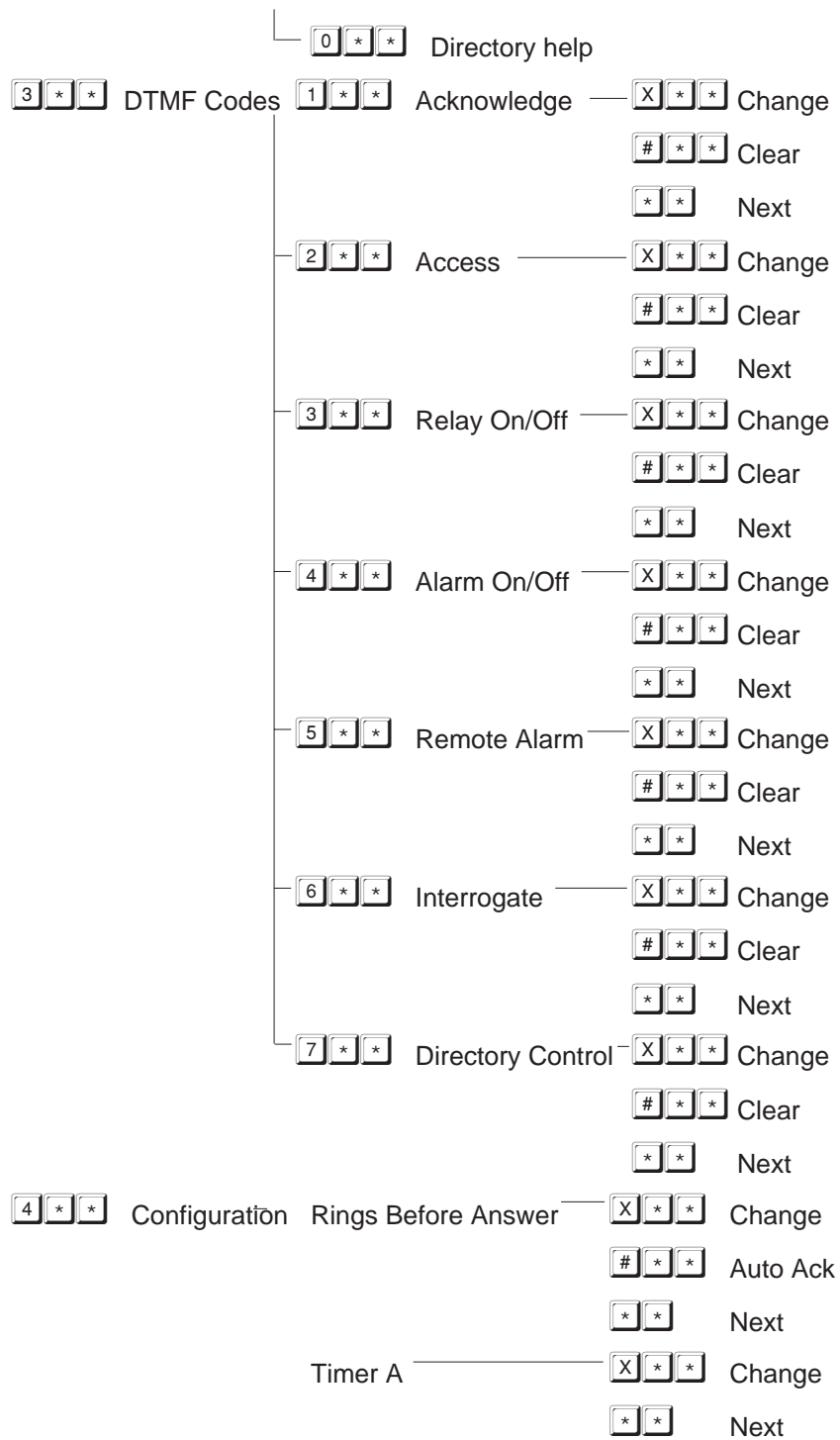


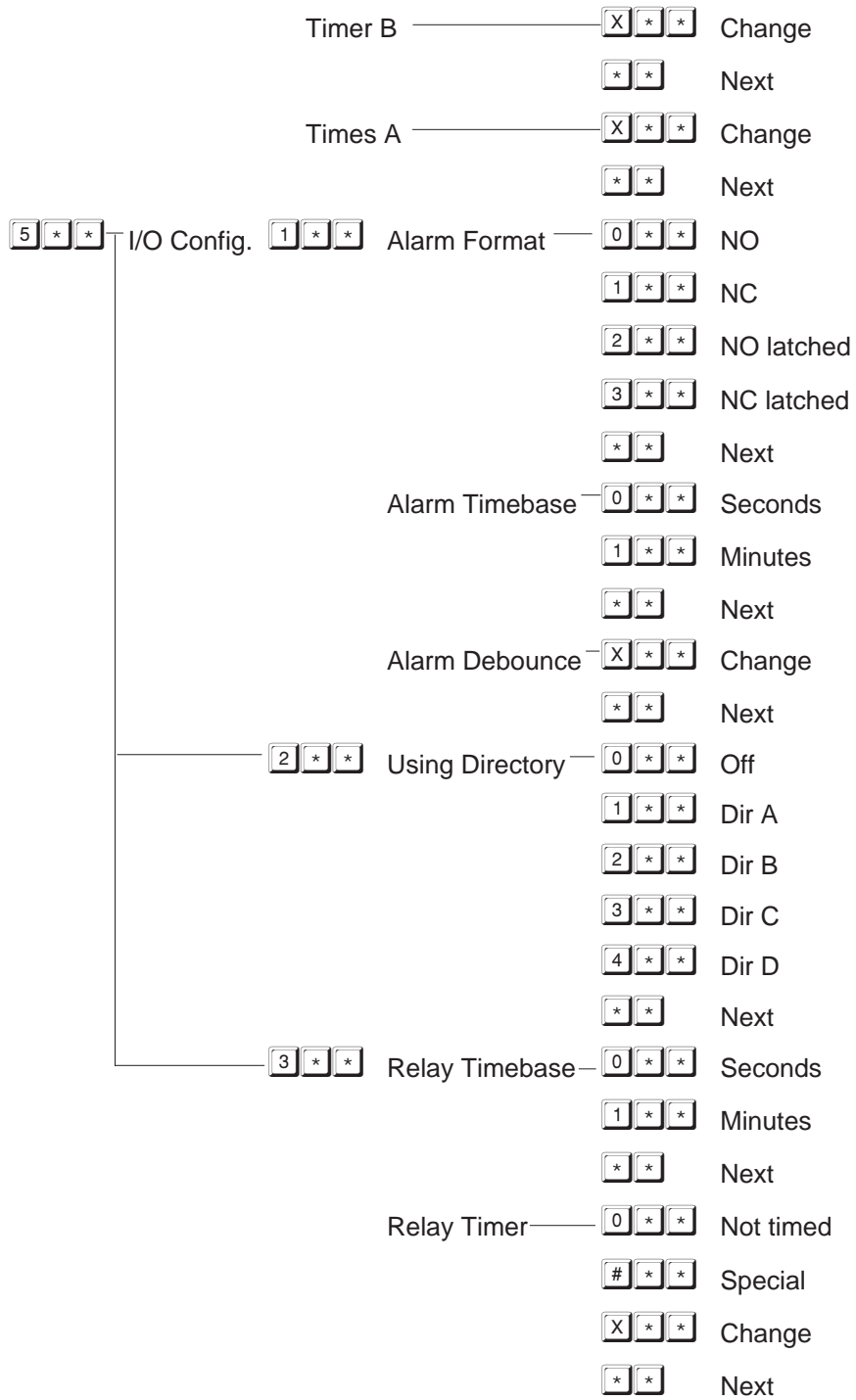
**Figure 8 Option 004 Connections**

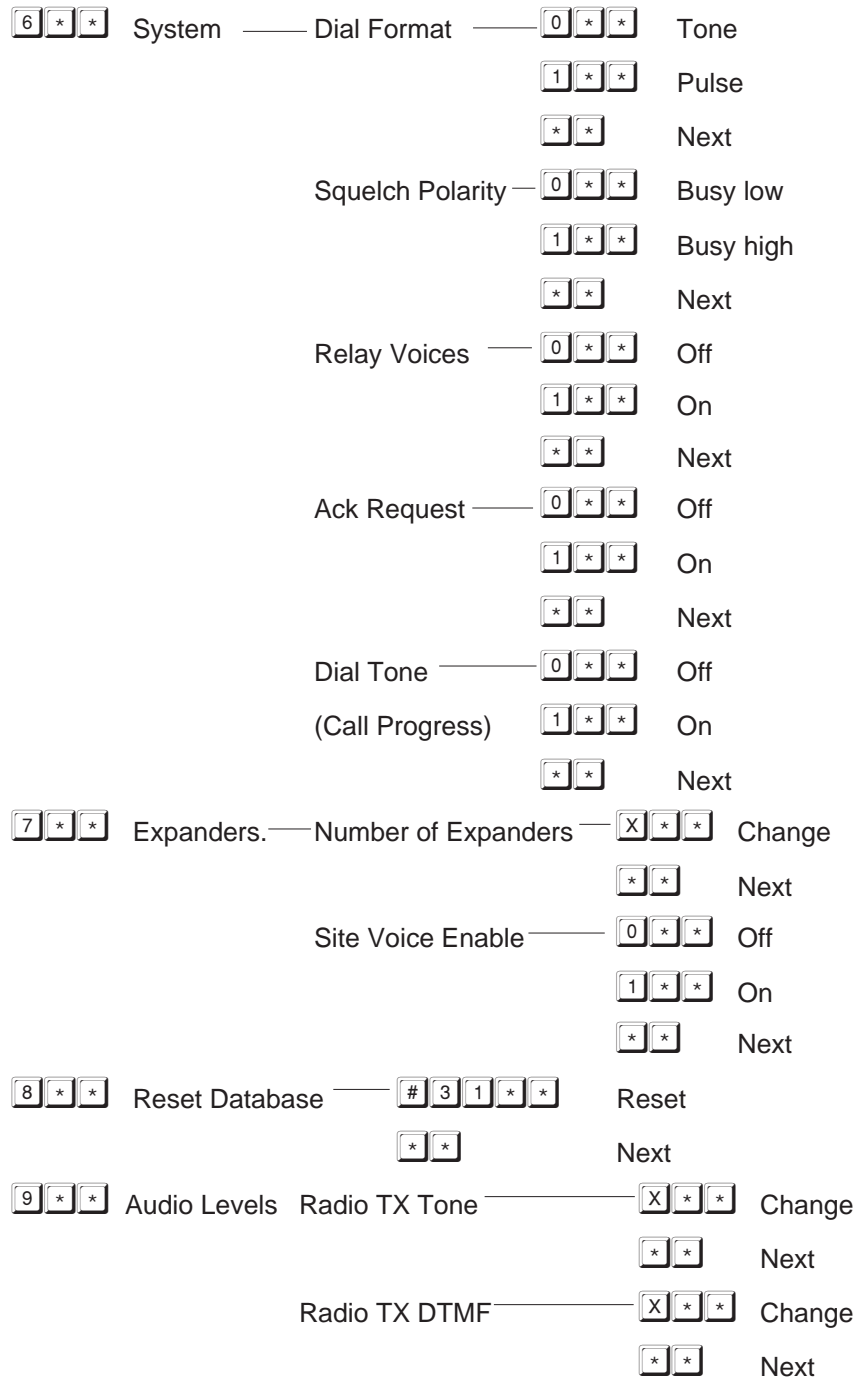
## Appendix C - Programming Tree

The parameters used to program the ProTalk Plus are given as a summary below. Where  appears, user data is entered











Radio TX Voice —————    Change

Next

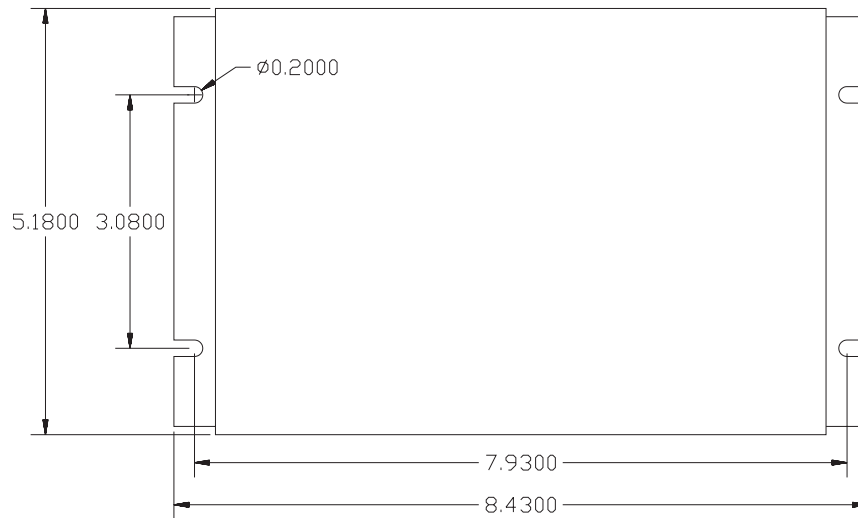
Radio RX —————    Change

Next

Phone RX —————    Change

Next

## Appendix D - Mounting



**Figure 9 Mounting Detail**