

# PowerDialer<sup>a</sup>

user manual v 8.0

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## introduction

Thank you for choosing PowerDialer. PowerDialer repeatedly dials busy telephone numbers as quickly as your telephone company can process the calls. When busy signals or "All circuits are busy" recordings are encountered, PowerDialer immediately hangs up and continuously retries until it encounters either a ring-back or speech, meaning that the call has gone through. An alarm sounds to signal a successfully connected call.

PowerDialer was specifically designed to redial telephone numbers that seem to be constantly busy, such as ticket order lines for concerts, theater, or sporting events; radio contest lines; golf tee-off and tennis court reservation numbers; technical support lines; computer on-line services and bulletin boards, etc. PowerDialer can also be set to periodically retry un-answered phone numbers. Other features include the ability to store numbers in memory, advanced tone detection, and a built-in speaker for hands-free monitoring.

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# installation

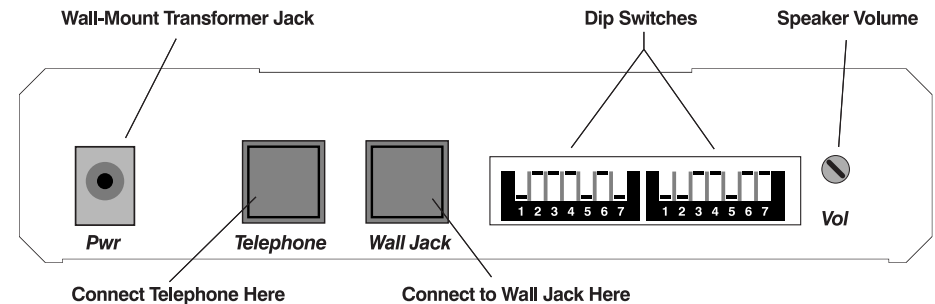
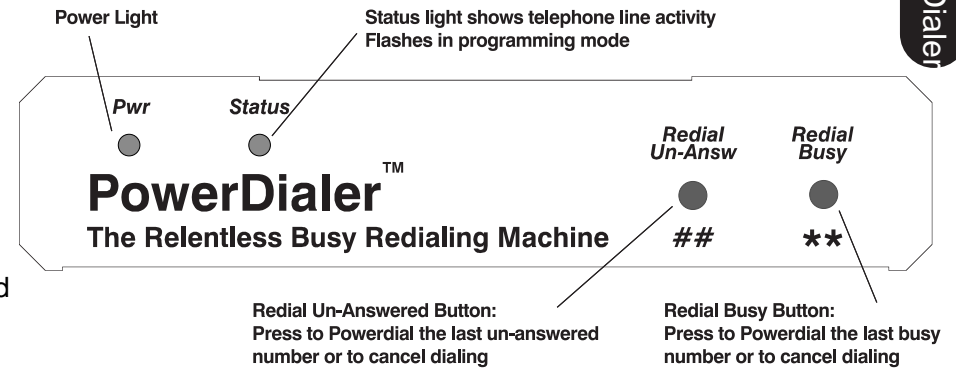
1. Connect the jack labeled **Wall Jack** to a telephone wall jack with the included telephone cable.
2. Plug your telephone into the jack labeled **Telephone**
3. Plug the included Wall-Mount transformer into an AC outlet, then connect the other end to the jack labeled **Pwr**.

## Notes:

¥ PowerDialer will play a series of tones during power-up. After the tones have been played you are ready to PowerDial.

¥ PowerDialer can be accessed from all the extensions of a telephone line. To do this, connect the incoming telephone line where it enters the building to the jack labeled **Wall Jack**. Connect your telephone extensions to the jack labeled **Telephone**. When PowerDialer is connected this way, monitoring of dialing is done through your telephone or speaker phone.

¥ PowerDialer is designed to work perfectly even when connected through caller-I.D. boxes, answering machines, and modems.



# quick start:

1. Connect and plug power into the the PowerDialer according to the instructions under Installation. (Make sure that the volume control is set half way.) You should hear a series of start-up tones. This means that the unit is working properly.
2. Make sure the Dip switches are set to the following factory-set default settings:



3. Pick up the telephone and dial a busy number. (You can sometimes call your own telephone number as a test.) When you hear the busy signal hit \*\* on the telephone.
4. The \* triggers the dialer to repeat dial the number you just dialed. The dialer will then start to Power Dial continuously until you cancel dialing.
5. When the Dialer hears a ringing signal and breaks through, the dialer will sound an alarm.
6. To cancel repeat dialing, hang up the telephone, or hit the ## button on front of the unit.
7. To dial the same busy number again, hit \*\* on the telephone, or hit the button in front of the unit to dial un-answered numbers.

# PowerDialing busy or un-answered numbers.

Once PowerDialer is powered-up, it is ready to repeat dial, or PowerDial un-answered numbers. PowerDialing of busy numbers is done continuously, while PowerDialing of un-answered numbers is done once every minute. PowerDialing can be initiated in a number of different ways:

## PowerDialing a Busy Number

Take the telephone off-hook and dial a telephone number. If the telephone number is busy, stay off-hook and hit \*\* on your telephone's keypad. This will PowerDial the busy number you just dialed.

Example: 555-1234

PowerDials the telephone number 555-1234.

## PowerDialing the Last Busy Number Dialed

Take the telephone off-hook and hit \*\* on your telephone's keypad, or alternatively hit the \*\* button on the front of the PowerDialer. This will PowerDial the last number dialed.

Example: \*\*

PowerDials the last number dialed.

## PowerDialing a Stored Number

Take the telephone off-hook and hit \*N\* where N is a digit between 0 and 9 previously stored into memory. PowerDialer will PowerDial stored number N.

Example: \*4\*

PowerDials the telephone number stored at location 4.  
(See page 17 on information on how to store numbers.)

## PowerDialing Un-answered Numbers

PowerDialing of un-answered numbers is performed exactly as above, but the # key is used instead of the \* key.

Examples:                   555-1234  
                                  ##  
                                  #4#

*Note: Powerdialing of un-answered numbers is done once every minute.*

## PowerDialer Monitoring

After initiating a PowerDial using one of the commands above, you have the option of staying off-hook or hanging the telephone up and going back on-hook.

To PowerDial while the telephone is on-hook, place the receiver back on-hook before the PowerDialer finishes its first dialing attempt.

If you remain on-hook, dialing attempts are monitored through PowerDialer's speaker only. If you do not hang up, you can monitor dialing attempts through your telephone or speakerphone and PowerDialer's speaker.

*Note: The speaker monitor dip switch must be in the up position to enable speaker and telephone monitoring. (see page 16)*

## Speaker Volume

Speaker volume can be adjusted by turning the Vol. knob on the back of the unit. The Vol. knob has no effect on the monitor volume through the telephone.

## Success Tones

When PowerDialer gets through, its alarm will sound and the status LED will flash rapidly.

If the telephone has been off-hook while dialing, the alarm will sound for a second, and the call will be connected through.

If the telephone has been on-hook while dialing, the alarm will sound for 30 seconds. Picking up the telephone receiver will connect the call.

## Canceling Repeat Dialing

There are two ways to cancel redialing: conduct a hook flash, or hit either the \* or ## buttons on the front of PowerDialer.

## Redialing Busy vs. Un-Answered Numbers

PowerDialer can redial busy or un-answered telephone numbers. When dialing busy numbers, PowerDialer will sound the success tone when it encounters either a ring-back signal, or speech, whichever comes first. When dialing un-answered numbers, PowerDialer will sound the success tone when it encounters speech only. When redialing un-answered numbers, PowerDialer waits for approx. 9 ring-back signals before deciding no one is home and retrying.

*Note: for PowerDialer to sound the alarm when it detects speech, the speech action detection dip switch (page 16) must be in the down position.*

# advanced operation & programming

PowerDialer is capable of being programmed. In programming mode you can:

¥ Store ten frequently dialed numbers in its memory.

¥ Program an alternate number. When an alternate number is programmed, PowerDialer can dial a number more than 15 times.

## Entering the Programming Mode

Command: ##

To enter the programming mode, type ## from your telephone's keypad. PowerDialer will emit a series of tones to signify that it is at the top of the programming menu, and the red status light will flash. As long as the status light is flashing, you are in the programming mode. Once in programming mode, you can issue more than one programming command.

If the programming command is error-free and accepted, the dialer will beep 3 times and bring you to the top of the programming menu. Once at the top of the programming menu, you can issue a new command.

To exit programming mode, hang up the telephone.

A long error tone signals any programming mode mistakes.

Note: When in the programming mode, all incoming calls through the PowerDialer are disabled.

## Storing Numbers into Memory

Command: 1#N#TELNUM#

There are 10 memory locations, numbered 0-9. You must enter programming mode first in order to store numbers.

Example 1:

To store 555-1234 into memory location 2:

Type 1#2#5551234#

Note: Placing a \* in a stored telephone number will force PowerDialer to wait for dial tone or wait 2 seconds, whichever comes first. This may be necessary if you must first dial a digit to get an outside line.

Example 2:

To program memory location 3 to dial a 9, pause 2 seconds, then dial 555-1234:

Type 1#3#9\*5551234#

## Erasing Numbers from Memory

Command: 1#N##

Example 1:

To erase the number stored in memory location 5:

Type 1#5##

## Programming an Alternate Number

Command: 2#ALTNUM#

The FCC requires that automatic dialing devices redial a number no more than 15 consecutive times in 10 minutes. PowerDialer dials 15 times, dials an alternate number once without connecting the call through, then resumes dialing the original number. The alternate number is set at the factory as the digit 9. This number can be changed by dialing the above sequence.

### Example 1:

To program the alternate number as 555-1234:

Type 2#5551234#

### Erasing the Alternate Number

Command: 2##

### Example 1:

To erase the alternate number:

Type 2##

Note: If you erase the alternate number, the dialer will only dial 15 times.

# command summary

Entering Programming Mode      Command: # #

Exiting Programming Mode      Command: Hang-up

Storing Numbers into Memory    Command: 1#N#TELNUM#

Erasing Numbers from Memory    Command: 1#N##

Programming an Alternate Number    Command: 2#ALTNUM#

Erasing the Alternate Number    Command: 2##

# dip switch settings

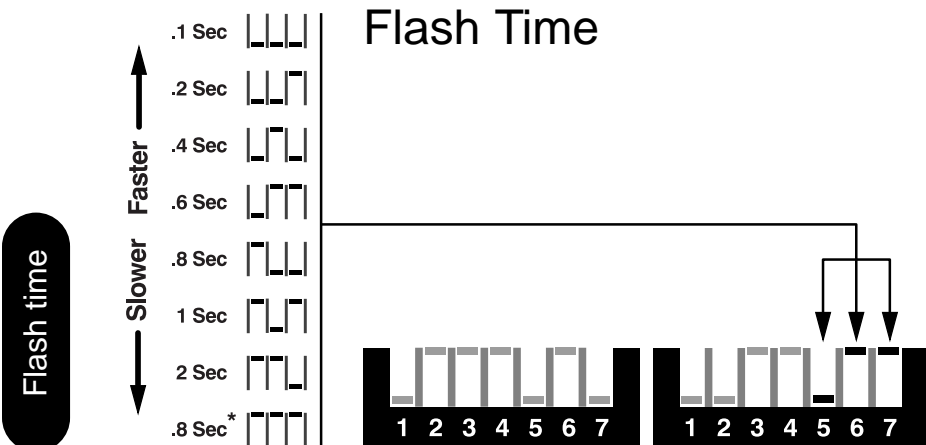
There are 14 dip switches located in the back of PowerDialer. These are used to configure dialing parameters.

## IMPORTANT, PLEASE READ BEFORE SETTING SWITCHES!

The dialer is factory shipped with default dip switch settings. These settings should work for 90% of all users and should not need to be changed. However, in special circumstances, or for custom operation, they may need to be changed. Be very careful when changing switch positions as these can drastically effect how the dialer operates. If the dialer seems to be operating strangely, or not at all, begin again, starting at the factory default settings. Every dip switch picture in this manual depicts the factory settings. Never adjust the flash time and dialing speed to the fastest settings automatically, as these settings will probably be too fast for your local telephone company. If you wish to increase the dialing speed, you can experiment, and incrementally adjust first the flash time, and then the dialing speeds. Never change the switch settings for flash time and dialing speed at the same time. Experiment, and start reducing the flash time first, then dialing speed.

## Flash Time

These three switches control the amount of time that PowerDialer goes back on-hook between subsequent dialing attempts. Decreasing the flash time increases the speed of a dialing cycle. This should be set to two seconds if you have three way calling on your line. If you do not have a standard dial tone, set all three switches to the Up position. This will cause an .8 sec flash and will allow Power Dialer to dial without first hearing a standard dial tone.

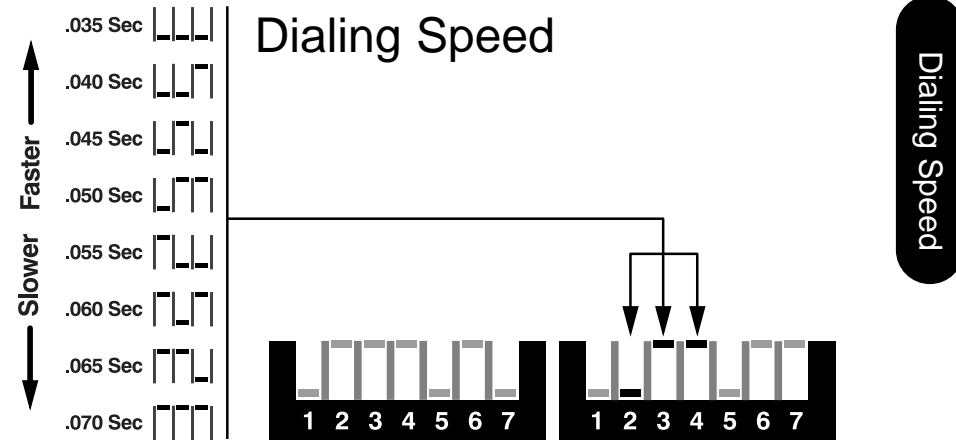


\* No dial tone required.

## Dialing Speed

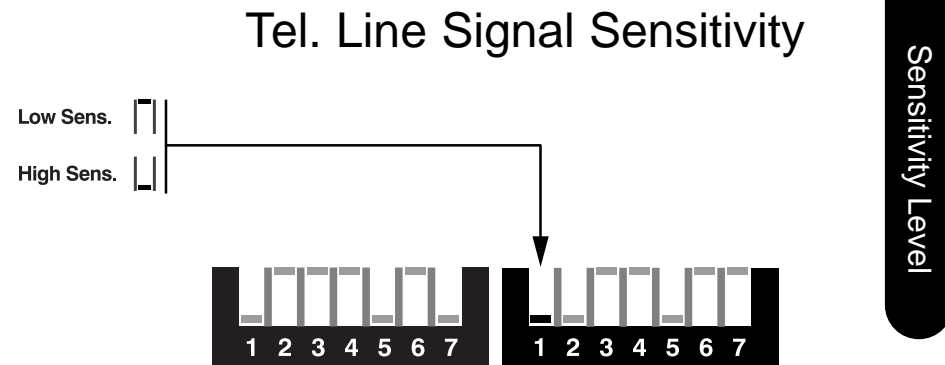
These three switches set the amount of time that it takes to dial each touch-tone digit. Decreasing the amount of time increases the speed of a dialing cycle.

\* Never just select the fastest setting immediately as it will probably be too fast for your telephone company. Experiment to incrementally decrease the Flash time until the unit ceases to operate properly then go back by one setting.



## Sensitivity Level

This switch controls how sensitive the PowerDialer's circuitry is to telephone signals. It is factory-set for High Sensitivity. If you experience extraordinarily loud telephone signals after the dialer dials, or your line has lots of noise on it, set this switch to Low Sensitivity. If the dialer seems to false-trigger after, set this switch to Low Sensitivity.



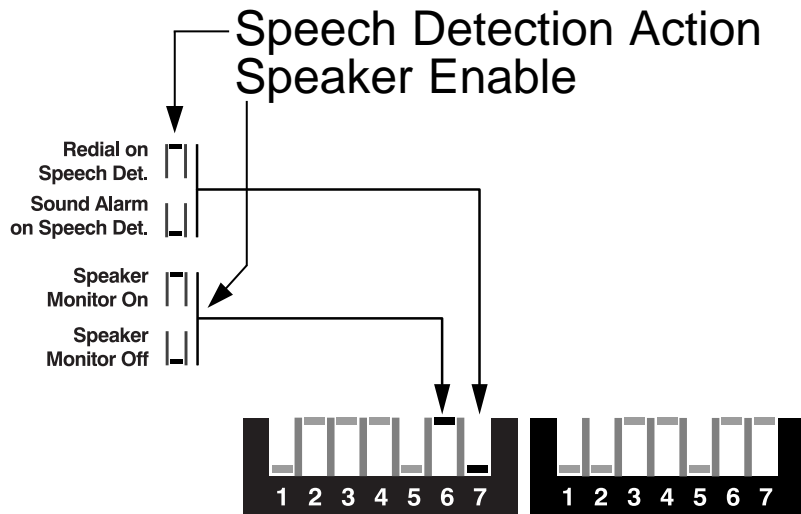
## Speaker Monitor

When this switch is placed in the **Up** position, PowerDialer will monitor the dialing through its on-board speaker. When in the **Down** position, all dialing will be done silently. Alarm sounds are always played regardless of this switch position.

## Speech Detection Action

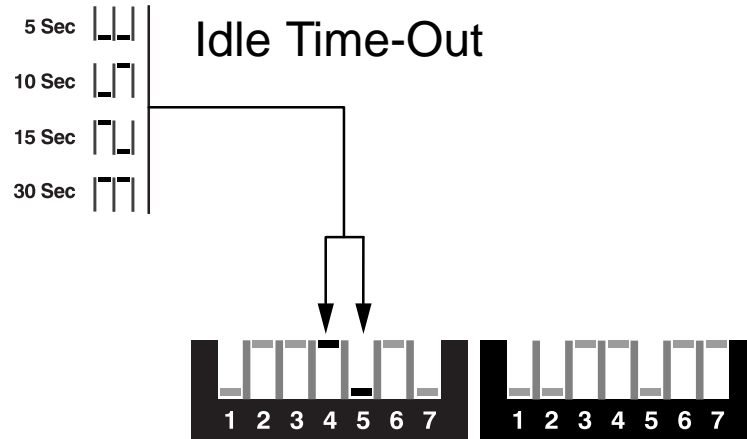
When this switch is in the down position, PowerDialer will always sound the alarm when it detects speech. When in the up position, the dialer will hang-up and redial whenever it detects speech. Place this in the up position if you sometimes get the **all circuits are busy** recording without first receiving the 3 S.I.T. tones (see page 19 for information on S.I.T. tones).

Speech Monitor / Speech Det Action



## Idle Time-Out

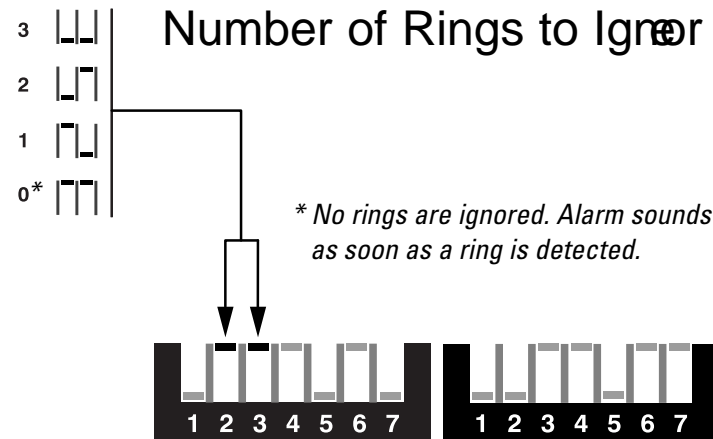
These two switches set the amount of time that PowerDialer will wait (after dialing the last digit of a phone number) for a busy signal, ring-back, S.I.T. tone, or speech before hanging up and redialing.



Idle Time-Out

## Number of Rings to Ignore

Normally, you want the dialer to trigger and sound the alarm as soon as it detects a ringing signal; you do not want it to ignore any (0) rings (Factory Setting). However, sometimes when you call Ticketmaster or other extremely busy numbers, you can receive 1, 2, or 3 full ringing signals before it then turns into a busy signal, S.I.T. tone. Setting this switch to 1, 2, or 3 tells the dialer to ignore this number of ring-backs before sounding the alarm. This prevents the dialer from false-triggering when you receive ringing signal(s) that turn into a busy signal.



# Rings to Ignore

## Four-(4) Second Telephone Announcement Delay

Sometimes, after dialing a telephone number, the telephone company places a short message on the line as the call is being placed. For instance, if ATT is your long distance carrier, sometimes ATT will play "ATTÓ" in a recorded voice right after the number is dialed. If this happens to you, you must place this switch in the "Up" position, or the dialer will think that a person has answered the call, and the alarm will sound. By placing this switch in the up position, the dialer waits approximately 4 seconds after dialing the number, before it starts listening for tones or speech, and thus the short recording is ignored. If you do not get a message, place the switch in the down position (Factory setting)

Placing the switch in the up position and adding a 4 second delay will decrease the dialing speed. Sometimes you can call your telephone company and have this message removed from your line.

Alternatively, you can add 2 or more pauses to the end of a dialed number to achieve the same result (see programming telephone numbers).

4 Sec 4 Announcement Delay

### 4 Sec Telephone Announcement Delay



# general notes & application hints

## A Few Words About Busy Signals

While most busy signals in the U.S. have a standard tone frequency at a standard cadence or rhythm, there are slight variations. PowerDialer is capable of identifying busy signals based on both cadence and tone frequency. Tone detection is the faster and more reliable method, but often the busy signal is distorted and PowerDialer must rely on cadence. PowerDialer first listens for a standard busy, ring-back, or S.I.T. tones. If PowerDialer can not identify the tone by its frequency, it resorts to cadence detection. Of course if speech is detected at any time, the success tone will signal.

## Speech Detection

When dialing a number, sometimes the called party answers before the caller hears a ring-back. PowerDialer has special speech-detection circuitry to detect when this happens.

As soon as someone answers the phone, regardless of whether or not there was a ring-back, the success tone will normally sound. (Note: Speech detection action dip switch must be in the down position, see page 16)

## All Circuits are Busy / S.I.T. Tones

Occasionally when dialing a busy number it is possible to get a series of 3 tones followed by an "all circuits are busy" message. PowerDialer has special circuitry designed to detect these 3 tones (called S.I.T. tones). If the S.I.T. tones are detected, PowerDialer will hang up and try again.

*Note: The taped message must be preceded by S.I.T. tones for PowerDialer to properly recognize this condition. If you encounter "all circuits are busy" messages without S.I.T. tones, you must set the speech detection action dip switch to the up position (see page 16) so that PowerDialer does not think that this is an answered call.*

## Dialing to Reach an Outside Line

Office telephone systems often require you to dial a digit (such as the number 9) to reach an outside line. PowerDialer listens as you dial and figures out whether it needs to pause for dial tone. For example, if you dial 9 555-1234, and PowerDialer hears a dial tone after the number nine was dialed, it will automatically dial a 9, pause and wait for dial tone during dialing attempts.

## Three-Way Calling Service

Three-way calling requires you to conduct a longer than usual hook-flash to actually hang up. If PowerDialer's hook-flash does not achieve a dial tone, it will retry up to 3 times with a longer hook-flash until a dial tone is reached. This new hook-flash time will be used for subsequent dialing attempts until the call gets through or is terminated.

## Using PowerDialer with Fax or Modem

To use PowerDialer with your fax or modem, simply dial the telephone number followed by \*\* or ##. If your modem software allows you to, you may wish to set S7=255 so that the modem waits 255 seconds for carrier.

## Non-Volatile Memory

PowerDialer will remember stored telephone numbers and the last number dialed, even when power is lost.

## Initiating a System Reset

A system reset can be performed by depressing the ## and \* buttons simultaneously while powering up the unit. This will erase all stored telephone numbers and store the digit 09 as the alternate number.

## Dialing Automated Attendant Systems

Sometimes when calling an automated attendant system (such as a card verification computer, or bank information line, etc.) it is necessary to dial additional digits including # and or \* once the automated system answers. For re-dialing purposes, it is important that the PowerDialer stores only the original telephone number dialed but ignores all other "extra" Touch Tones that might be sent when you start making your way through a remote automated attendant.

To achieve this, PowerDialer requires all Touch Tone digits to be entered within 10 seconds of each other. If more than 10 seconds elapses after you hit a Touch Tone digit, the dialer will ignore subsequent digit entries.

If you call an automated system, and you don't want PowerDialer to record the extra Touch Tone entries, call the telephone number then wait 10 seconds before issuing additional Touch Tones.

# troubleshooting/q & a's

PowerDialer clicks, then disconnects my phone when I hit ##. Your Telephone/Wall Jack connections are hooked-up backwards. Make sure to connect the incoming telephone line to the jack marked "Wall Jack". Connect your telephone to the jack marked "Telephone".

Nothing happens when I plug the Wall-Mount Transformer into PowerDialer.

The "Pwr" light on front of the unit should glow, and a power-up tune should play. If the Pwr light is not illuminated, check to make sure your Wall-Mounted Transformer is plugged in properly. If you do not hear the power-up tune, the volume control may be turned all the way down. Turn the volume control knob clockwise to increase the volume.

PowerDialer hangs up and tries again before the call has a chance to go through.

The idle time-out dip switches are probably set too low. Increase the idle time-out time to 15 or 30 seconds. (See Page 17, Idle Time-Out)

The dialer only dials 15 times, then stops. How can I have it dial more than 15 times?

PowerDialer can automatically dial a telephone number more than 15 times, but there must be an "Alternate Number" programmed inside the unit first. The unit comes from the factory with the digit 09 programmed as the alternate number. It will dial more than 15 times right out of the box. There is normally no need to enter or change the alternate number. If, for some reason, the factory programmed alternate number of 09 is not acceptable, you can always change the alternate number to something else. (See programming the alternate number on page 11.) If you enter the alternate number, dialing is limited to 15 attempts.

PowerDialer sometimes takes longer to detect busy signals, why is this?

Some phone companies and central offices do not send back the correct tone for busy signals. When this occurs, PowerDialer relies on advanced cadence detection. Cadence detection typically takes longer (2 seconds vs. 1/2 second).

Sometimes PowerDialer takes a long time to connect through and hear a busy signal. Why?

When the circuits are jammed, it takes longer for the phone company to connect you. You still have an major advantage over other callers, as PowerDialer detects and redials busy numbers as quickly as possible.

Is PowerDialer compatible with 69,\*70, etc?

Yes, if you dial \*69, \*70, or some other "Class Service" command through our telephone company, PowerDialer will dial it as well.

I lent my PowerDialer to a friend and now it doesn't seem to dial as quickly. Why?

Your friend probably adjusted the dip switches. Check the dip switches and/or custom configure them for your particular line.

I can not seem to program the dialer. Why?

Make sure to first press # to enter programming mode.

## Common Dialing Situations and Solutions

Below is a list of specific situations that can occur when dialing extremely busy numbers, and suggestions on how to have the dialer work with them.

### Ringling signals that turn into busy signals

Sometimes after a call is made, the line will ring 1,2, or 3 times then turn into a busy signal, indicating that the line is busy. In this case, you must tell the dialer to ignore the "false" ring backs. To do this, you will need to set the "Number of Rings to Ignore" Switches (see page 17). When this is done, dialing speed is decreased, but the dialer will not false-trigger and sound the alarm by mistake.

### "All Circuits are Busy" message without S.I.T. tones

When the lines are very jammed, it is common to get a "All Circuits are Busy" message. This is usually preceded by three (S.I.T.) tones. The dialer will always detect these tones and will redial under this scenario. However, sometimes this message come on immediately, without the three tones and without a ring. In this case, it is desirable to immediately hang up and re-dial. To do this, set the "Speech Detection Action" switch (page 16) to the up position. This tells the dialer to hang up and re-try if it hears an "All Circuits are Busy" message before it hears a ring or S.I.T. tone.

### Ringling, then "All Circuits are busy" message comes on without S.I.T. tones

The worst situation is when you get one or more rings, then the "All Circuits are Busy" message comes on without any S.I.T. tones. In this case, it is necessary to set the "Number of Rings to Ignore" setting to the appropriate number of rings to ignore (page 17) and set the speech detection action switch to up (Redial on speech detection. page 16) This will work some of the time, but not all of the time. Fortunately, this condition is relatively rare.

### Noisy Telephone Lines

Sometimes you may encounter very noisy telephone lines. At times, the dialer might interpret this as speech and sound the alarm. To correct this, set the "Sensitivity Level" dip switch to the UP position. This tells the dialer to increase sensitivity and prevents false triggering.

### Telephone Company Announcements like "ATT" or "ATTN"

Sometimes, after dialing a telephone number, the telephone company places a short message on the line as the call is being placed. For instance, if you are a long distance carrier, sometimes ATT will play "ATT" in a recorded voice right after the number is dialed. If this happens to you, you must place the "Call Start Announcement Pause" switch (Page 18) switch in the "Up" position, or the dialer will think the person has answered the call, and the alarm will sound. By placing this switch in the UP position, the dialer waits approximately 4 seconds after dialing the number, before it starts listening for tones or speech, and thus the short recording is ignored. If you do not get a message, place the switch in the down position (Factory setting).

# Increasing Dialing Speed

The two main parameters that control how fast the dialer dials are Flash Time and Dialing Speed. Each can be independently set to increase dialing speed and are described below:

## Flash Time

Flash time is the time the dialer hangs up between subsequent calls. This is the same period of time that you would place your finger on the handset cradle, each time if you were dialing manually. Obviously, the faster you can Hook-flash, the better. The trick is to get the dialer to flash as fast as possible, but not too fast for the telephone company to operate properly. The dialer comes factory set with a flash time of .6 seconds. This setting works most all of the time and is fairly quick. However, if you wish to tweak out every last bit of speed performance from the unit, you can set the flash time to a value that is lower than .6 seconds. The best way to do this is to find a setting that works successfully, then to decrease it, one setting at a time until the flash time setting is just too fast for the telephone company's central office. To do this, start at .6 seconds by setting switches 5, 6, and 7 down, up, up respectively. Dial the busy number you are trying to break into. If the dialer seems to work fine, reduce the flash setting by one to .4 seconds, and see if this works. Continue this procedure until the dialer stumbles, does not seem to dial smoothly or does not dial at all. At this point go back up the last setting that worked fine. At no time should you just set the flash time to the fastest setting (.1 second) and hope for the best. This setting works only on the absolute fastest central offices and will probably not work in your case! Also, make sure that you have "3-Way Calling" removed from your line if you have it on already. If you have 3-Way calling, the flasher required by the telephone company is 2 seconds, and dialing is relatively slow

## Dialing Speed

Once you have done some experiments to determine the fastest flash time, you can do basically the same experiments on Dialing Speed. Again, the lower the number, the faster the dialer will dial. As what was done for the Flash Time, start off at the factory setting of .050 seconds (50 thousandth of a second) and start increasing the dialing speed until the dialer does not seem to dial anymore. At this point, go back to the last setting that did work. As with setting the flash time, do not instantly set the dialing speed to .035 Seconds! This is the fastest setting and works only with the fastest Central offices. Make sure you set the flash time first, then the dialing speed. Do not attempt to adjust and change both at the same time.

# limited warranty

Technology Arts, LLC warrants to the original consumer or other end-user purchaser that this product is free from defects in materials or workmanship for a period of two years from the date of purchase. During the warranty period, and upon proof of purchase, the product will be repaired or replaced (with the same or similar model) at our option, without charge for either parts or labor. This warranty shall not apply if the unit is modified, tampered with, misused, or subjected to abnormal working conditions (including, but not limited to, lightning and water damage.)

REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY OF THE PURCHASER. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR USE OR PURPOSE, AND TECHNOLOGY ARTS SHALL IN NO EVENT BE LIABLE FOR INDIRECT OR CONSEQUENTIAL DAMAGES OF ANY KIND OR CHARACTER.

Some states do not allow the exclusion or limitation of incidental damages, or allow limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which may vary from state to state.

# FCC information/registration

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received including interference that may cause undesired operations.

FCC ID: MHJ6176428422

This Equipment complies with Part 68 of the FCC rules.

|                     |                   |
|---------------------|-------------------|
| Model #:            | PD-1              |
| USOC Jacks:         | RJ11C/W           |
| Ringer Equivalence: | 0.2A              |
| Part 68 FCC ID:     | 4F4USA-22646-DI-T |

An FCC compliant telephone cord and modular plug is provided with this equipment. This equipment is designed to be connected to the telephone network or premises wiring using a compatible modular jack which is Part 68 compliant.

The REN number above is used to determine the quantity of devices which may be connected to the telephone line. Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of all RENs should not exceed five (5.0). If PowerDialer causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. If advance notice isn't 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.

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 necessary modifications to maintain uninterrupted service.

If trouble is experienced with PowerDialer, please contact Technology Arts, LLC 713 Quail View Ct. Oak Park, CA 91377 - or call 818-707-1471 for repair and/or warranty information. If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved. No repairs should be made by the customer. This equipment cannot be used on public coin phone service provided by the telephone company. Connection to party line service is subject to state tariffs. (Contact the state public utility commission, public service commission or corporation commission for information).

# radio and television interference

This equipment generates and uses radio frequency energy, and if not installed and used properly, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception.

However, there is no guarantee that interference will not occur in a particular installation. If this device does cause interference to radio or television reception, which you can determine by monitoring reception when the dialer is installed and when it is removed, try to correct the problem with one or more of the following measures:

- ¥ Reorient the receiving antenna.
- ¥ Relocate the dialer with respect to the receiver.
- ¥ Relocate the dialer and/or the receiver so that they are on separate branch circuits.

If necessary, consult your dealer or an experienced radio/television technician for additional suggestions. You may find the following booklet prepared by the Federal Communications Commission, helpful:

How to Identify and Resolve Radio-TV Interference Problems  
Stock No. 004-000-0345-4  
U.S. Government Printing Office  
Washington, DC 20402

In accordance with Part 15 of the FCC rules, the user is cautioned that any changes or modifications to the equipment described in this manual that are not expressly approved by Technology Arts, LLC could void the user's authority to operate the equipment.

## electrical specifications

|                     |                 |
|---------------------|-----------------|
| Model #:            | PD-1            |
| Size                | 5" x 6" x 1.1"  |
| Weight:             | 16.5 Ounces     |
| Power Supply        | 24v DC @ 400 ma |
| Ringer Equivalence: | 0.2A            |

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