Doorbell Fon™ User and Installation Manual

Congratulations on purchasing your NEW **DoorBell Fon™** intercom system. This device will provide you with the latest phone intercom system for years to come. It features simple installation and easy operation, bringing into your life security, peace of mind and convenience. The system works with your incoming regular telephone line, or it may be used as a stand-alone unit. It may also be linked to multi-line, PBX or Key systems. With the optional modules available to incorporate into the system, you have the ability to open door-locks, sound your doorbell chime, or change your home telephone system into an intercom system.

The **DoorBell Fon™** control unit requires only one connection from your incoming telephone line and one Door Station. A second Door Station may be added to the controller for another entryway, or add other modules to integrate into your system.

Enclosed in this kit you will find:

- **1 - DP28C Controller**
- **1 - User Guide** (*with warranty registration card*)
- **1 - Door Station (Optional)**

This device is simple to install, but please follow this installation guide carefully. **If the instructions are not followed and the unit is damaged, you may void your warranty.**

INDEX

Installation Procedure

Connection of your DoorBell Fon Main Controller……...2
Connection of your DoorBell Fon Door Station…….....3
Installer's Notes……3
Powering up your DoorBell Fon Unit……..3

Wiring Diagrams

How to use Existing Doorbell Wires in a House Installation……4
DSL Wiring Diagram……5
VoIP Wiring Diagram……...5
Door Strike Controller Wiring Diagram……6
Door Chime Controller Wiring Diagram……6

Operating Instructions and Q&A……..……..7

Troubleshooting……8

Return for Repair Procedure……13

Warranty……..15

INSTALLATION PROCEDURE

Connection of your DoorBell Fon ™Main Controller

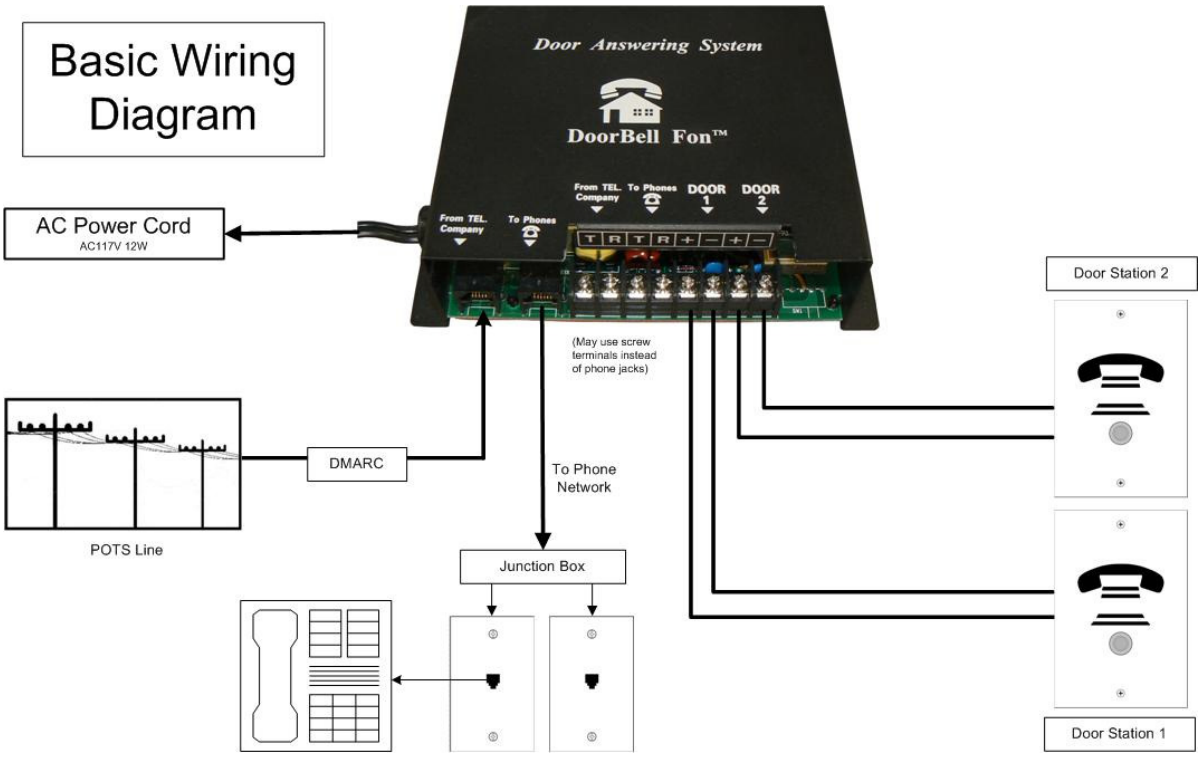
Locate where your incoming phone line (POTS) enters your house. This is the location where you will connect the Main Controller (black box). This device will usually be the first device attached to your telephone line. If a there is a security system on the phone line, the DoorBell Fon Main Controller must go after the security system and before the phones. If you are using DSL or VoIP please refer to the "Wiring Diagrams" section for installation.

You will need to cut the line after it enters your house: this is where you will attach the Main Controller. Once severed, connect this line to the controllers **From TEL. Company** position. (*You may use the jack connectors or screw terminals; they both operate the same*)

Next, connect the other end of the line you cut, to the **To Phones** position. (*Again, you may use the jack connectors or screw terminals; they both operate the same*)

Alternatively, you may disconnect the POTS line from your distribution panel and connect it to the **From TEL. Company** position and use fresh phone wires to connect the **To Phones** position back to the distribution panel.

At this time, you may mount the controller in your desired location. Ideally the installation location should be in-between the phone line entering your house and distribution panel before the phones throughout the home.



Connection of your DoorBell Fon ™Door Station

Find the best location to mount the Door Station. If the Door Station is the DP28-NIT or DP28-NWT model, remove the screw located at the bottom of the Door station. This will remove the Door Station from the mounting bracket. Mount the bracket at the desired location.

You will notice there are two screws at the upper-left-hand corner on the back of your Door Station. Connect a pair of wires to these screws and run the length of wires to the location of the Main Controller (black box). Once you have run the wires to your controller, you may connect them to either Door 1 or Door 2 screw terminals on the black box. Please remember to observe proper polarity.

Both Door 1 and Door 2 connections provide a different ring pattern; test both for your personal preference as to which one you prefer. After making the connections and you are satisfied with the ring pattern selected, mount the Door Station back onto the mounting bracket.

INSTALLER NOTES:

1. **Please Note: Our system is not compatible with Motorola Telephone systems.**
2. Your customer may prefer the ring pattern on "Door 2" rather than "Door 1". There is no problem using either door connection.
3. You can connect "in-series" up to 4 Door Box Controllers together for a total of 8 zones.
4. If the Door Station polarity is wrong, the unit will ring, but there will be no communication and the Door Station LED will not glow at all.
5. If you are using the Intercom Module add-on, you can only use 1 Door Station and only on the "Door 1" terminal.
6. Shorting the pair going to "Door 1" or "Door 2" will cause the unit to ring the phones and will not damage. Applying this, you can use an existing doorbell button in series with a 300 ohm resistor to ring the phones.
7. If you are installing "To Phones" to a telephone system, you will lose the distinctive ring between Door Stations 1 & 2, since you will then hear the phone system's ring when the button is pushed. You could purchase a Tone Generator, which would allow you to send the ring from the door over the customer's-existing paging system. This applies to most wireless phones as well.
8. Optional chips are available which will let the unit ring more (*N8H*), fewer times (*N1H*) or only connect to the "To Phones" of a PBX, KSU, or phone-set without a CO line to the "From TEL. Company" *(N8NC).*
9. There are two fuses on the circuit board. One for the phone line (F2) and the other for the AC power line (F1).
10. To determine if there are too many phones connected to the DoorBell Fon system, check the REN on all phones connected total the number. If it is above 4.6 then the REN is too high and there are too many phones. Older phones will have a higher REN than they are labeled as they age.
11. **ACNC/DoorBell Fon™** highly recommends installation of Lightning Surge Protection on the AC circuit and incoming phone line. Lighting damage is not cover by the warranty.

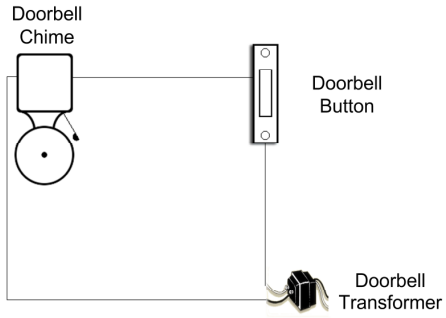
Powering up your DoorBell Fon ™unit

Once your connections are secured and checked, you may power up the unit by plugging the controller cord into an 110V outlet. Once the unit is powered up, the LED light on the Door Station should glow dimly if the polarity is correct. If it does not, then the wires were not connected properly. Double check the polarity of the two wires, make sure that the (+) is connected to (+) and (–) is connected to (–).

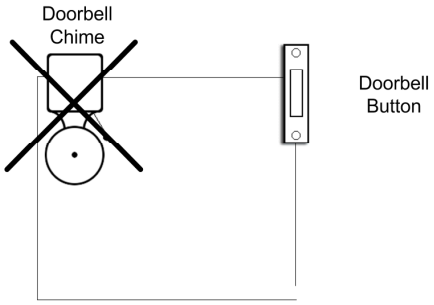
If you have followed the instructions carefully and your DoorBell Fon system is not working properly, please refer to the trouble-shooting page for assistance.

WIRING DIAGRAMS

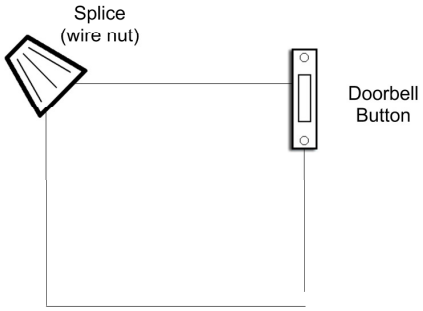
How to use Existing Door Bell wires in a House Installation



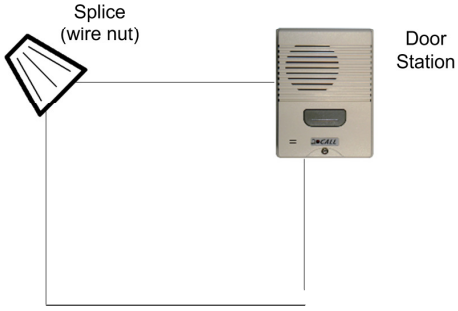
Step 1: Locate the doorbell's transformer. Disconnect the low voltage wires from the transformer.



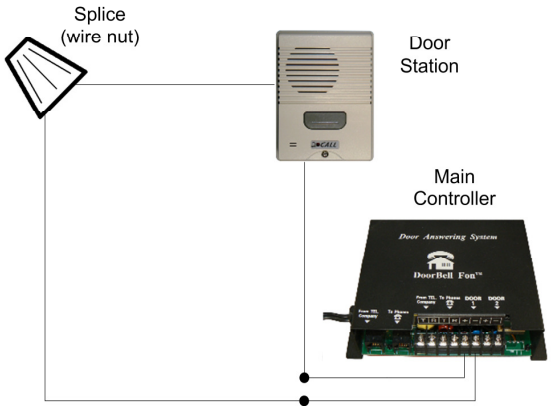
Step 2: Go to the existing doorbell and disconnect the wires. Splice the 2 wires together.



Step 3: Remove the existing doorbell button. Replace it with the Door box using the same 2 wires. Note which wire you connect to (+) and (-).

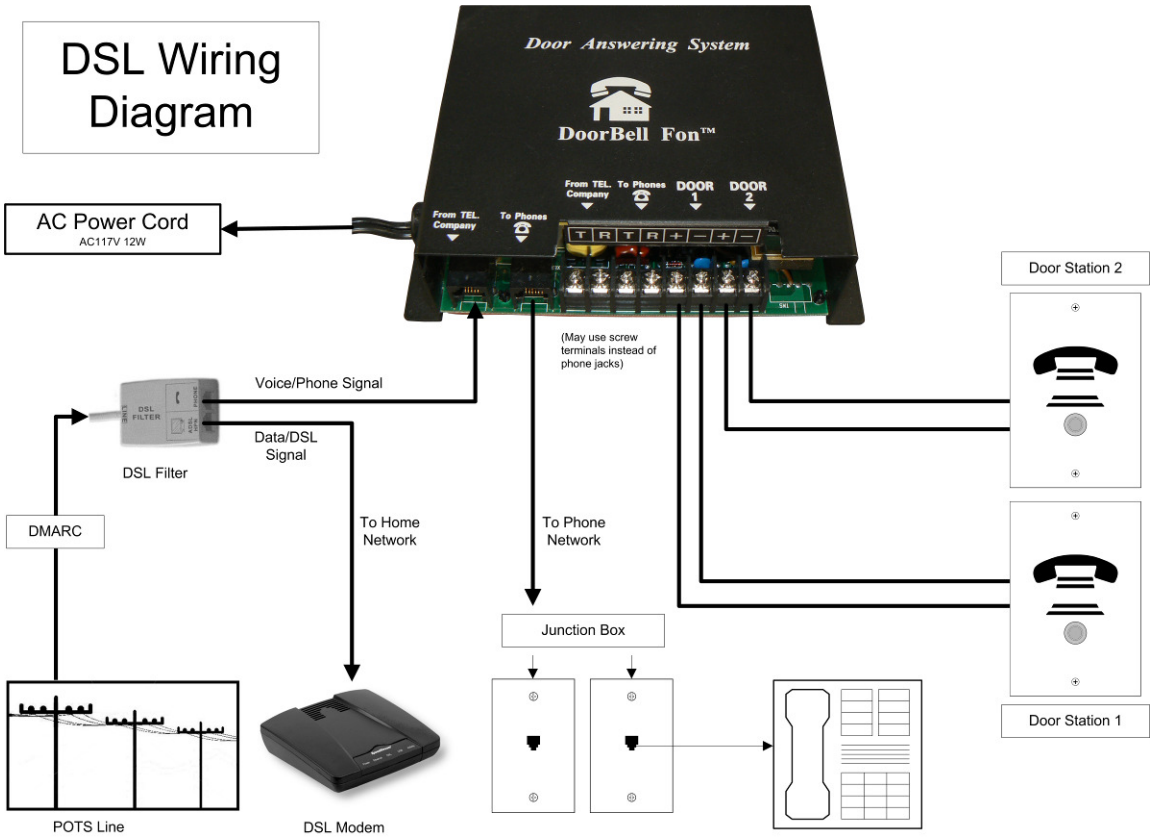


Step 4: Go back to the transformer location. Splice a pair of wires to the wires taken off of the transformer, and run it to where you are mounting the Door Box Controller. Note that you need an AC outlet and access to the phone line where you install the Controller.

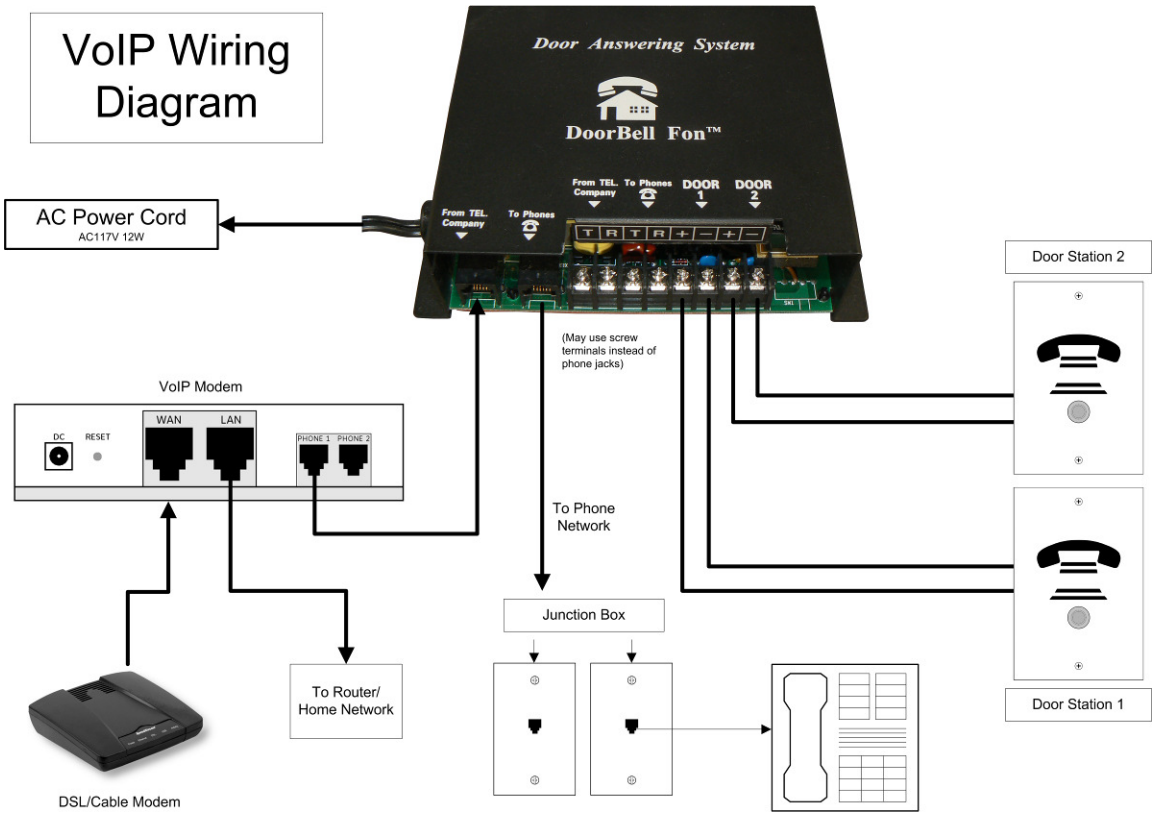


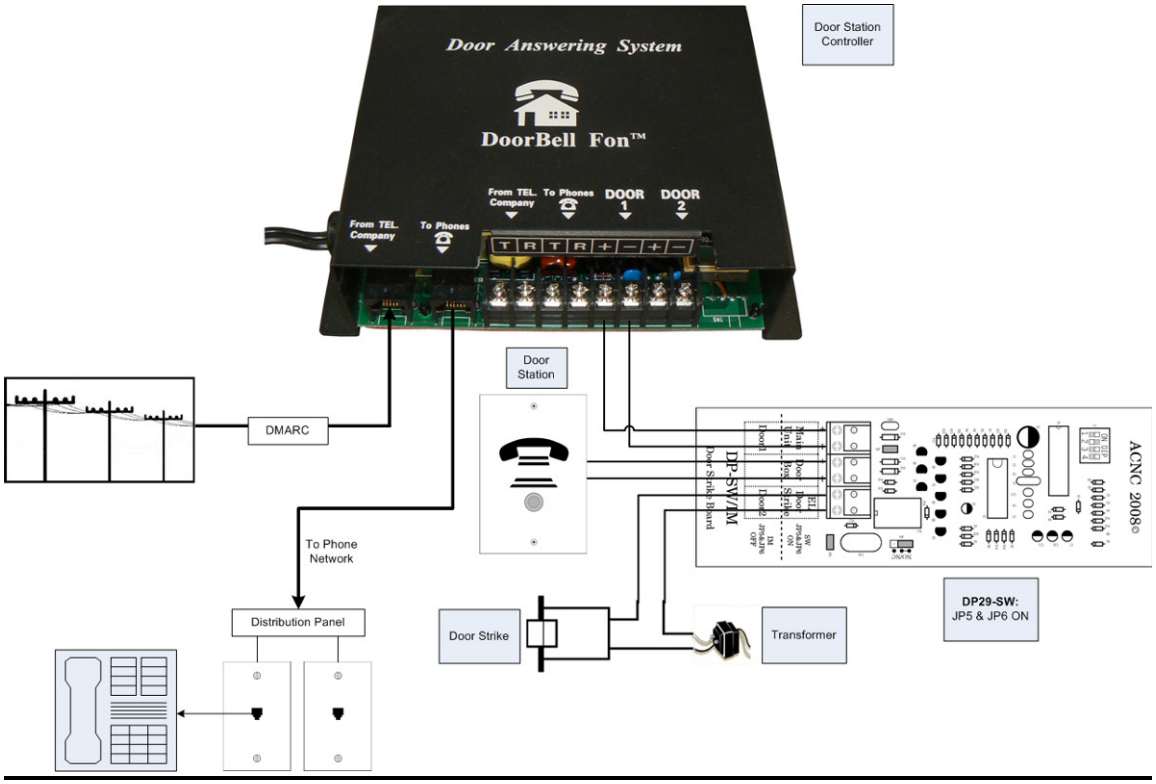
Step 5: Connect the wires from the Door Station to "Door 1" or "Door 2". Connect the incoming phone line to "From TEL. Company". Connect "To Phones" to the phones. Plug the power cord into the outlet. You will hear a "click" sound and connected phones will ring when the controller is activated.

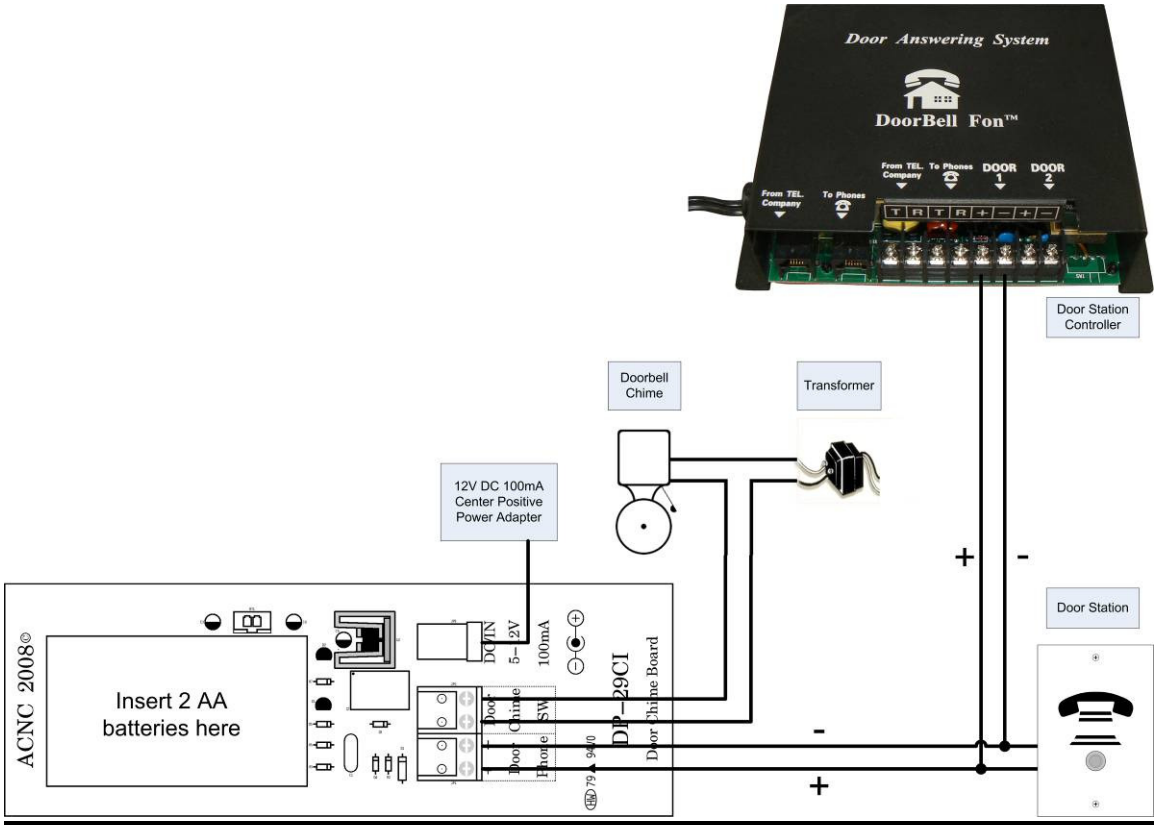
DSL Wiring Diagram



VoIP Wiring Diagram




Door Answering System
DoorBell Fon™
From TEL. Company
To Phones
DOOR 1
DOOR 2
Door Station Controller
Door Station
DMARC
To Phone Network
Distribution Panel
Door Strike
Transformer
DP29-SW:
JP5 & JP6 ON
DP-SW/M
ACNC 2008©


Door Answering System
DoorBell Fon™
From TEL. Company
To Phones
DOOR 1
DOOR 2
Door Station Controller
Doorbell Chime
Transformer
12V DC 100mA
Center Positive
Power Adapter
Door Station
Insert 2 AA
batteries here
ACNC 2008©
DP-29CI
Door Chime Board

OPERATING INSTRUCTIONS and Q & A

Please read over the following Q & A section to help you with the normal operations of this product.

"How do I answer my door or gate?"

Simply pick up your telephone. You will automatically be connected with the Door Station. The controller will determine which Door Station is calling if there are more than one.

"What if I pick-up the phone after it stopped ringing?"

The **DoorBell Fon™** will ring your telephone within a series of 3 distinctive rings. If it is not picked up after the last series of rings you will have approximately 25 seconds to pick up the phone and press the flash key (hook switch if no flash key is present) to connect to the Door Station.

"What if I'm on the phone when someone comes to my door?"

The **DoorBell Fon™** has built-in call waiting. If you are on the telephone and someone pushes the button on the Door Station, you will hear its signal on your telephone. Simply press the "flash" or hook switch on your receiver and you will be talking to the door. When you are finished talking to the Door Station, just press the "flash" button, or hook switch on your receiver and you will be connected back to the call that was on hold.

"Will the DoorBell Fon ™affect my answering machine?"

The **DoorBell Fon™** will not affect the normal operations of your answering machine. If you wish for your answering machine to answer your door, simply set the answering machine to 2 rings. If not set the answering machine to over 3 rings.

"How will I know if it is an outside line or a door when my telephone rings?"

The **DoorBell Fon™** generates its own ring pattern for both "Door 1" and "Door 2" positions. You can distinguish the difference in rings by the duration of the rings. A normal ring pattern is 1 second on and 2 seconds off. Door 1 has a pattern of 1 second on and 1 second off. Door 2 has a pattern of 1 second on, ½ second off, 1 second on and 1 second off.

"The volume is too low or high on the Brass or Aluminum Door Stations! How can I adjust the level?"

There is a potentiometer on one side of the pc-board of the Door Station. Turn it clockwise slightly to adjust the volume level to your preferred settings. Generally, factory setting will already be at maximum volume. If the volume is low, please refer to the troubleshooting section.

"Can the DoorBell Fon ™open my door for me?"

Yes, the DP29-SW/IM add-on controller will allow you to open any electric door or gate by pressing the (*) button on your phone keypad.

"How many phones can I connect to the DoorBell Fon ™?

There is no specific number of phones. The number is based on the Ringer Equivalency Number (REN) of all the devices connected to your telephone line. The maximum operating ranges for the DoorBell Fon™ is 4.6 to 5.0. You can calculate the total number by looking at the labeling on the bottom of all your telephones, caller ID units and answering machines. Please note that older, hardwired phones usually have an actual REN greater than the printed value as the REN value rises over time.

This number is a FCC Certification approving a telephone terminal product for direct sale to the end user. The "REN" number consists of a letter and a number. Total all of the numbers on all telephones, caller ID units and answering machines. If this number is exceeded, you may have to purchase a 'Ring Booster'.

"What if I hear a dial-tone in the background when I answer the Door Station?"

The installation is wrong! The DoorBell Fon's™ Controller should be the first in series before all other phones in your home.

TROUBLE SHOOTING

When I press the Door Station button, the phone will ring; however, I cannot talk on the phone.

- If this is a new installation, check to see if the LED light becomes brighter when the Door Station button is pushed. If it does not, check the (+) and (-) connections on the DoorBell Fon Main Controller (black box). This device is polarity sensitive, so make sure the (+) and (-) connections are not reversed.
- If this is an old installation that use to work, the Door Station might have a faulty microphone or speaker. Contact ACNC Customer Service for replacement parts.

I can communicate with the Door Station, but I cannot get a dial-tone when I pick up the handset of the telephone.

- Unplug the power of the controller. If there is still no dial-tone, check the fuses inside the controller. Replace if necessary. F1 is a 0.5A/250V electrical fuse and F2 is a 0.25A/250V phone fuse. 0.5A/250V may be used for F2 as well.
- While unplugging the DoorBell Fon controller listen for a dial tone. While powering up the controller again, pick up the phone handset. If you get the Door Station instead of the dial-tone, then your phone set is a non-standard phone set. Non-

standard phone sets will send an incorrect signal to the DoorBell Fon controller. You must replace the phone set to get dial-tone.

My Caller ID will not work with the DoorBell Fon.

- The Caller ID will not display anything when a Door Station rings your phones. Normal phone calls should still function normally.
- The problem might be caused by the total REN (Ring Equivalency Number) of all your telephone devices (answering machine, caller ID, phone sets.) The total REN should be under 4.6. If the total is over 4.6, you will need a Ring Booster.
- If the REN is less than 4.6, replace the F2 phone fuse in the DoorBell Fon Main Controller with a 2AG 0.25A or 0.5A fast blow fuse.

When the DoorBell Fon is pressed, there is static on the line.

- Unplug the controller. Turn the plug 180 degrees and plug it back in after 10 seconds.
- If you have DSL, the data and phone signal must be split before entering the Main Controller. The phone signal will go the Main Controller and the data signal will bypass the Main Controller and go to the internet modem.
- If you have an alarm system, it needs to be installed in series before the Main Controller on the phone line.
- If none of these steps work or do not apply, please contact ACNC Customer Support.

My phone will not ring.

- Switch the Tip (T) and the Ring (R) at the ”To Phones” terminal on the DP28-C. Some phones are polarity sensitive.
- Pick up the telephone handset and press the “flash” key or hook switch to attempt communication with the Door Station. If there is communication, then your total REN is most likely over 4.6 and a ring booster is needed.
- If you are not able to communicate with the Door Station, please go to the DoorBell Fon Main Controller and quickly short the 2 screws connected to the Door Station with a jumper wire or paper clip. If the phones ring, please check the connection between the Door Station and Main Controller.
- At the Main Controller, disconnect wires coming from terminals labeled “To Phones.” Check all the phones in the house for dial tone. If there is dial tone present on any of the phones, please double check all telephone wiring to make sure dial passes through only the Main Controller before reaching the phones.
- Connect a single basic, corded analog phone set directly to the Main Controller. Press the Door Station button to ring the phone. If the phone does not ring, short the Door Station screw terminal at the Controller. If the phone rings, please double check all wire connections.
- If none if these steps you work, the Main Controller might be faulty.

My Door Station makes a funny noise, almost like a motorboat.

- This is most likely normal, if it is not a high pitch squealing motorboat sound.

My Door Station makes a squealing noise or gets a lot of feedback.

- If the Door Station faceplate is metal, please make sure the plastic film cover has been removed.
- Locate the R11 potentiometer on the Door Station circuit board. Turn the screw counter-clockwise until squealing or feedback disappears.
- Place foam or insulation inside the Door Station mounting box.
- If the Door Station is the DP28-NIT or DP28-NWT model, please make sure the Door Station is not installed by the corner of a wall.
- Contact ACNC Customer Service if these steps do not solve your problem.

I am having volume problems with my Door Station.

- If the Door Station faceplate is metal, locate the R11 potentiometer on the Door Station circuit board. Turn the screw counter-clockwise to lower the volume and clockwise to raise it.
- Temporarily install the Door Station directly at the Main Controller. If the volume is normal, please check the wires. Do not "double up" on wires for each lead.

People inside cannot hear the people outside and/or people outside cannot hear the people inside

- The Door Station microphone, speaker, or circuit board might be faulty. Please contact ACNC Customer Support about replacements.

When I answer an incoming call, I get the Door Station instead of the incoming call.

- Reverse the tip and ring wires (usually green and red) in the telephone wall outlet.
- If the problem persists, the phone set is likely a non-standard phone set. Please replace the phone set or contact ACNC Customer Service for a special replacement chip.

All of my phones ring except my answering machine or cordless phone.

- Check to make sure that section of the house is properly connected to the DoorBell Fon Main Controller at the distribution panel.
- Reverse the tip and ring wires (usually green and red) of that telephone's wall outlet.

The LED on the Door Station is always brightly lit.

- If the phones are not constantly ringing, the Main Controller or Door Station or both might need to be replaced.

THE LED on the Door Station does not light up.

- Check the Door Station (+) and (-) connections. The LED will not light if the polarity is incorrect
- Check the F1 fuse inside the Main Controller. Replace if necessary.
- Contact ACNC Customer Service if these steps do not resolve the issue.

I am using the Telephone Keypad Relay Trigger/Door Strike Controller. When I press the (*) key, my electric/magnetic lock will not open.

- Please verify that the DIP switch is programmed to the desired key. The (*) key code is (up, down, up, up).
- If using a magnetic lock, please change JP4 from Normally Open (NO) to Normally Closed (NC).
- If using a standard corded phone, please hold the (*) key to extend the signal. If using a cordless phone, please press the (*) at least 3 times quickly.

My phone rings back after I release my electric lock/gate and hang up the phone.

- Please allow at least 1 second after activating the electric lock/gate and before hanging up the phone to allow the signal to finish.

When I am on the phone and someone presses the Door Station, my phone call is cut off instead of receiving the call-waiting tone.

- Test with a basic, corded analog phone set (not the phone where calls are being cut off) hooked up directly to the Main Controller in the phone jack labeled "To Phones." If the phone call is not interrupted when the Door Station is pressed, then the other phone is a non-standard phone. If the problem persists with different phone sets, please contact ACNC Customer Service.

The phone keeps ringing but no one is pushing the Door Station button.

- If a regular doorbell is being used instead of a Door Station, please remove any lights inside the doorbell.
- If any add-on components (DP29-SW/IM or DP29-CI) are being used, remove them one by one and see if the phones continue ringing. iF the phones stop ringing, the last component removed is most likely defective.
- Disconnect all wires from "Door 1" and "Door 2" screw terminals. If ringing persists, either the Main Controller is defective or brown outs are occurring at the location. Replace Door Stations if the ringing stops.

After installing a new chip, the phone line never gets released.

- Please reseat the new chip and make sure there are no bent pins.

A regular doorbell switch is being used instead of a Door Station, but it does not work properly.

- A 330 ohm resistor must be placed in series with the doorbell button.

The DoorBell FOn system needs to be hooked up to a PBX system.

- Please use a vacant FXO port instead of FXS. The FXO port is also known as the CO port or trunk line.

- If there is no telephone company line connected tot eh Main Controller, please use a N8NC chip inside the Main Controller. Contact your DoorBell Fon dealer or ACNC Customer Support to order one.

What are the expected terminal voltages on the Main Controller?

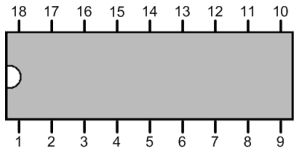
Terminal Pairs	State	Voltage (DC)
LINE IN/"From TEL. Company"	Not connected	0
LINE OUT/"To Phones"	LINE IN/"From TEL. Company" not connected	0
LINE IN/"From TEL. Company"	Connected to telephone company	48
LINE OUT/"To Phones"	LINE IN/"From TEL. Company" is connected to Telephone Company	48
LINE OUT/"To Phones"	LINE IN/"From TEL. Company" not connected (DP28-N8NC installed)	~28
LINE OUT/"To Phones"	Phone is off-hook, during conversation	~6
Door 1 (D1) or Door 2 (D2)	Open, not connected to Door Station	~4.3
Door 1 (D1) or Door 2 (D2)	Connected to Door Station	~2.2
Door 1 (D1) or Door 2 (D2)	Connected to Door Station with button pushed	~17

How can I make my Door Chime ring when someone pushes the Door Station button?

- You can use the DP29-CI Inbound Relay Trigger to activate your Door Chime. This will make your phones ring as well as your Door Chime and can only be used with 1 Door Station per system.

If I am using the DP29-CI to activate my Door Chime, how dod I keep my phones from ringing?

- Simply bend out pins 10 and 11 on the removable chip inside the DP28-C DoorBell Fon Main Controller. This will remove the phone rings as well as call-waiting while only the Door Chime rings.



RETURN for REPAIR PROCEDURE

In order to make this procedure as easy as possible and to validate your two-year warranty, it is important to fill-out and mail your units ***Warranty Registration Card*** to **ACNC** as soon as possible. We highly recommend doing so after the installation of your new unit.

Step 1 – IMPORTANT: Please call ACNC Customer Service and describe the problem. Tell the Service Representative if your unit is covered under warranty. Our Representative will issue you a *Return Merchandise Authorization* (RMA) Number. However, if your unit is not registered, but covered under warranty, you will need to provide proof of the Date-of-Purchase. If your proof of purchase is not available, or your unit is not covered under warranty, you will incur set repair fees. Our Customer Service Representative will provide you with this information.

Step 2 – When sending the unit, please pack the unit in its original carton. If that is not available a sturdy corrugated cardboard box using **NON-STATIC** material is necessary. **IMPORTANT:** Please **DO NOT USE** highly static prone material such as plastic wrap, Styrofoam based packing materials (i.e. Peanuts, popcorn, or beads); this material may cause further damage to the unit(s) in transit. Please do not include, the User Guide and the original documentation.

Step 3 – Include the following information with your unit:

- ✔ Your Name
- ✔ Your Address
- ✔ Your Telephone Number (day or evening)
- ✔ Return Merchandise Authorization Number (RMA)
- ✔ Description of the problem
- ✔ Repair Fee* (if any)

Step 4 – Ship unit(s) prepaid via UPS or U.S. Postal Service. We recommend that the unit(s) be insured when shipped. **ACNC WILL NOT** accept C.O.D. Packages**.**

*NOTE: ACNC will assess a charge if the previous items are not included in the shipment.

Mail Package to:

- ✓ ACNC/Doorbell Fon™
- ✓ Attn: Warranty/Repair Dept
- ✓ RMA# (include on mailing label)
- ✓ 1989 University Ln., Unit H
- ✓ Lisle, IL 60532
- ✓ U.S.A.

After repair or replacement, products will be shipped by **ACNC** at no cost to our customer(s) to any destination in the U.S.A, or its territories. Selection of carrier and method of shipment will be chosen by **ACNC**. If you desire another form of shipping, or

are located outside the Continental U.S. and its territories, you must pay for the cost of shipment plus any other incidental costs incurred.

FOR TECHNICAL SUPPORT

Telephone: 1.630.241.2800
Home Page: http://www.homephone.com
E-mail: info@homephone.com

WARRANTY

ACNC warrants to the original purchaser that each of its hardware products and all components thereof will be free from defects in material and/or workmanship for one year from the date of purchase. Any warranty hereunder is extended only to the original purchaser and is not transferable. If product is REGISTERED, this warranty covers all labor and materials for a period of two years from original purchase date.

In the event of a malfunction or other indication of failure, attributed to faulty workmanship and/or materials, **ACNC** will, at it's option, repair or replace the defective products or components to whatever extent it shall deem necessary to restore the product or component to proper operating condition, provided the product holds a valid warranty registration.

This warranty excludes damage from power surges by Natural Causes (i.e. Lightning strikes) or improper installation. Damaged units will not be covered under this warranty and is the sole responsibility of the customer.

ACNC holds the right to replace the defective product with a new or remanufactured functionally equivalent product of equal value.

This warranty is in lieu of all other express warranties which now or hereafter might otherwise arise with the respect to this product. **ANY AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR USE SHALL HAVE NO GREATER DURATION THAN THE PERIOD FOR THE EXPRESS WRITTEN WARRANTY APPLICABLE OF SUCH PERIOD.** Some states do not allow limitations on how long an implied warranty lasts, so this limitation may not apply to you. No action shall be brought for breach of any implied or express written warranty.

The customer shall be solely responsible for the failure of any **ACNC** product or component thereof; resulting from accident, abuse, or misapplications of the product, and **ACNC** assumes no liability as a consequence of such events under the terms of this warranty.

Incidental and consequential damages caused by malfunction, defect, or otherwise, and with respect to breach of any express or implied warranty, are not the responsibility of **ACNC**, and to the extent permitted by law, are hereby excluded both for property and to the extent not conscionable for personal injury damage. (*Some states do not allow the exclusion of limitation of incidental or consequential damages so that the above limitations or exclusion may not apply to you.*)

This warranty gives you the specific legal rights and you may also have other rights that vary from state to state. Some of the provisions of this warranty may not be appropriate to the law of your jurisdiction.