Comfort, the Intelligent Home System



DP03 Door Station

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Applications

- Talk to visitors from any telephone on the premises
- Talk to visitors from any telephone or cellular phone
- Open a lock-release or gate to let visitors in.

Specifications

- Up to 3 Door Stations per system
- Current consumption : 15 mA (idle), 150 mA with siren tone
- Speaker for voice and siren sounds
- Built-in microphone for conversation and recording
- Tamper switch (24 hour), with shunt bypass

Description

The **DP03** is a doorphone unit housed in a Polycarbonate casing, offering environmental resistance. The unit is surface-mounted onto a wall or gate

Location

Do not install a Door station in a noisy environment like beside busy road, as the background noise may prevent the telephone side from being heard on the Door Station

Installation

Open the doorphone housing by means of the screw at the bottom, Pull the top housing from the bottom housing.

Surface Mounting

Locate a level surface on the proposed wall. Mark the fixing positions on the wall using the two holes in the back housing as a guide. Before drilling the wall, use a hammer and center punch to make a clear indentation for the drill-bit to follow. Drill the wall to the exact depth of the rawl-plugs. The rawl-plug should be inserted into each hole and should not protrude from the wall, nether should it be deeply placed into the hole.

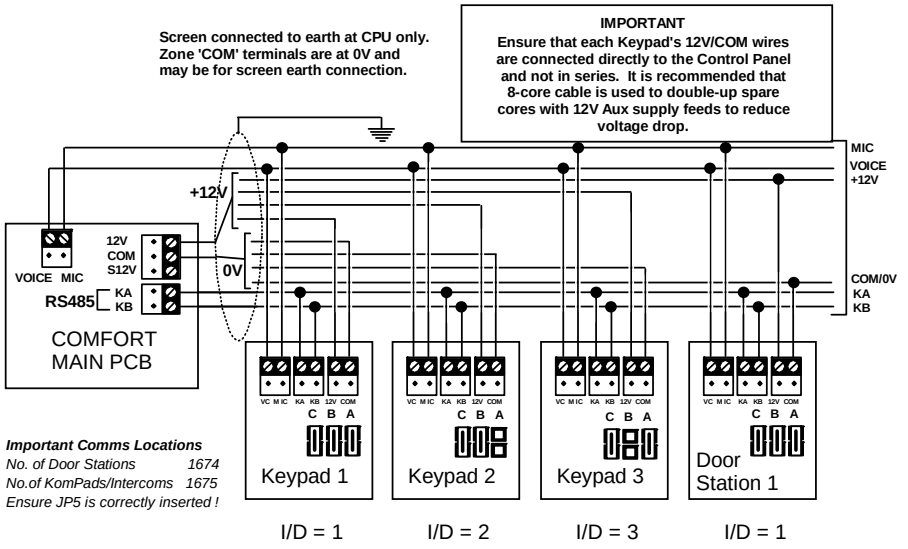
Unused holes in the back housing should be sealed to prevent water seepage using silicon sealant.

Weather Resistance

The Door Station housings are made of an ABS/Polycarbonate composite material, which resists extremes in temperature better than normal plastics. For outdoor mounting, apply some silicon sealant along the top edge along the line between the front and back housings to prevent water seepage.

The Door Station should NOT be mounted in a locations where it is exposed to direct rain water. It is NOT water-proof or rain-resistant.

Connections



The total resistance of each 12V and ground wire run should be less than 5 ohms. If possible, use at least 8-core cable and use the extra pair of wires for 12V and ground.

If more than one Door Station is used, connect their 12V and ground wires directly back to the Comfort control panel. Do not connect in series., as this will increase the resistance and hence introduce more voltage drop, which may adversely affect the performance of the unit.

The Ringer Module RGR04 is needed to ring the internal phones whenever the doorbell is pressed or a Reminder message is activated at the programmed times.

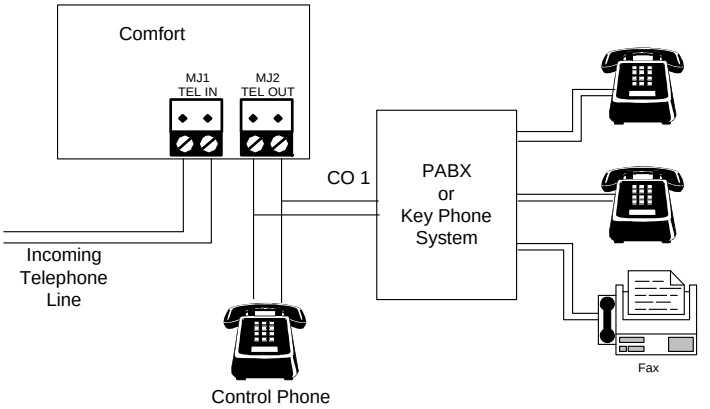
Connect the 6 wires from the terminal blocks on the Door Station to the Comfort PCB according to the connection diagram below. The Comfort Panel should not be powered during the Door Station installation.

After termination of the wires and ID selection, close the Door Station housing and screw it together It is essential that the tamper switch is not fouled by any of the cables.

Remember - Tamper Switch
The tamper switch is shunted out at the factory using **JP7**. Remove this shunt to activate the tamper mechanism. To disable the tamper switch prior to disassembly of the door station, enter the Engineer Test Mode which is menu 8, 6 1 for ON. This allows you to disturb the door Station tamper switch without any alarms being activated. Engineer Menu 8,6,0. Exits this mode.

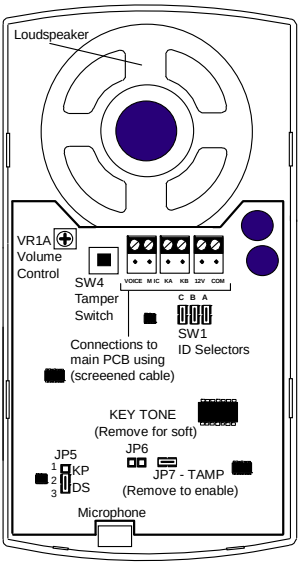
Switch on power to the Comfort Panel. A short beep should be heard on the Door Station followed by "Security Off" after 4 to 6 seconds.

Connection to a PABX/Phone system



Connect the incoming telephone line to the TEL IN terminal block of the Comfort Panel, and connect the Phone System to the TEL OUT terminal. This will allow Comfort to ring the telephones connected to the phone system.

Shunts / Adjustments



JP4: Speaker Shunt: Short to permanently enable speaker. Default Off

JP5: Door Station selection: Shunt positions 2 - 3 for Door Station.

JP6: Beep Volume. Short for louder beep volume. This affects specific keypad/Door station beeps like the beep sound generated by key presses only. Default Open (soft)

JP7: Tamper Shunt. Short to disable tamper switch. Default shorted (disabled)

SW1: ID selection (see table below)

VR1A: Volume Control

SW1 ID Selection:

Set the headers SW1 according to the ID of the Door Station according to the table

ID	SW1- A	SW1 - B	SW1 - C
1	Short	Short	Short
2	Open	Short	Short
3	Short	Open	Short

When a Door Station is installed, then a maximum of 3 Keypads may be installed using the Comfort panel as the power source. Up to 8 Keypads may be installed in a system and including a maximum of 3 Door Stations if a supplementary 12VDC power supply rated at 1A DC with battery back-up is installed. The additional Keypads may also be supplied from the Slave Expansion Module (SEM). The negative (com) of the Comfort CPU auxiliary 12V output should be connected to the negative 0V of the PSU as a reference. Up to 3 Door Station combinations may be installed in a system. Door Station Ids must be numbered consecutively. For example, if there are 2 Door Stations they must be set to Ids 1 and 2.

Door Station/ Keypad Performance

When a telephone is in conversation with the Door Station or Keypad, the audio is in “half-duplex” mode. This means that at any time, only one party (the telephone or Door Station) has its microphone on. Both sides cannot be heard at the same time. This is similar to a handsfree speakerphone which also operates in half-duplex mode. Normally, the Door Station microphone is on and the telephone is able to hear sounds from the Door Station microphone. When someone talks on the telephone, the audio direction is switched, so that the Door Station microphone is switched off and the speaker is switched on. As soon as the sound from the telephone falls off, the Door station speaker turns off and the microphone turns on. This switching operation is to prevent “howling” or positive feedback from occuring. In practice this is not very noticeable, and both parties can talk normally. During commissioning, it is important to ensure that a two way conversation can be carried out using a mobile phone to a Doior Station or Keypad.

Setting the Microphone Levels

Set the Door Station Speaker Volume level close to minimum. On the Comfort CPU, VR1 sets the MIC recording and listening level for the Microphone. Adjust this trimmer when in two way Voice Station Mode between a mobile phone and keypad or Door Station. Turn the trimmer clockwise for higher MIC gain and antoclockwise for lower MIC gain. This is normally set close to minimum.While in Doorphone menu between a telephone and a Doorphone (kept at least 4 metres apart), turn the pot fully anticlockwise and then slowly turn it clockwise at the same time being aware of the start of feedback. This adjustment should be done with a remote telephone, preferably with a mobile phone as this gives the worst performance compared to a landline telephone.

If the VR1 setting of MIC gain is too high, the voice on the telephone may not be heard on the Door Station speaker, although the telephone will be able to hear the Door Station. When the MIC gain is high, the noise level from the Door Station makes it difficult for the voice from the telephone to take over.

If the VR1 MIC gain is at minimum and the telephone voice still cannot be heard on the Door Station, the Gain from Line to Speaker must be increased. This gain is in Location 118 and 119 (CSXpress Tune parameter 35). Check that Location 119 is set to 1 and Location 118 is set to 25

Increase the value in Location 118 to 250 (maximum 255) to start with, reset the Comfort PCB and test. If necessary, reduce the value in Location 118 to lower the voume of telephone voice on the Door Station. **Always do a dial test after changing these locations to confirm that dialout is not affected.**

Door Station Programming

Location 1674 determines how many Door Stations are installed in the system. Enter valid values 0 or 1 and reset the system by pressing the Reset button on the Comfort PCB. When the Door Station button is pressed, a chime is heard on the Door Station and keypads. In Home, Night and Day Modes, the phones on the premises will ring if a Ringer Module is installed. In Away (and Vacation) mode the system will dial to the programmed number according to the settings in Alarm Type 25. A Doorbell Response may be programmed in Location 1691, which may be used for switching cameras or other supplementary actions.

Door Station as Internal Intercom

The Door Station can be used as an intercom within the premises, by making it appear as a Keypad. Set JP5 so that the Door Station is a Keypad. Set the ID switches in SW1 to select the next available address for a Keypad. Program Location 1675 to correspond to the number of Keypads in the system. Reset the Comfort panel. Pressing the Doorbell button will initiate the Intercom mode just like pressing the F + 8 function key. The Doorbell button also switches communications to talk mode when communications is established. However, this intercom cannot terminate the Intercom Mode, as there is no F key. Intercom mode can be terminated by the other Keypad or can be left to 'time out'. .

After completion, disable Comfort's RS485 data port KA-KB by setting Location 1672 to '0' by entering Engineer Menu 7,4,1, then RESET. Comfort is always ready to receive data if this flag is set, making the system vulnerable through the Doorphone.

Door Station Operation

In Security Off, press the Doorbell button. The Keypads will produce a door chime. If a ringer board is connected, the house telephones will ring. Press any button on one of the Keypads. The Keypad says

Press 0 for Door Station

Press 0. You can now talk to the Door Station. In this mode, only one side can talk at any time, while the other side listens. The red MIC led on the Keypad and Door Station comes on when the respective station is in Talk Mode. The Keypad controls the direction of the conversation by pressing 1 to switch from talk to listen and vice versa. To end, press the F key. You can see the red MIC led through the semi-translucent polycarbonate housing.

Press the Doorbell button again, but this time, use the local telephone to answer the chime. As before, press 0 for Door Station. With the telephone, you can talk naturally with the Door Station without having to press 1. Just hang up to end the conversation. Obviously, using the phone to talk to the Door Station is preferable to the Keypad, but the Keypad may be closer than the nearest telephone sometimes.

In Security Off, Day and Night modes, when people are at home, you can use the local phone or Keypad to answer the Door Station

If more than 1 Door Station is installed, pressing 0 for Door Station will connect to the one where the doorbell button was pressed. Pressing 1 to 3 will select the Door Station number directly.

Operation In Away Mode

In Away Mode, when no one is at home, Comfort is able to dial to a programmed phone to allow you to talk to the Door Station. To do this, program the dialout settings for the Doorbell Alarm Type. (Alarm Type 25)

Go to Alarm Types Menu (Engineer Menu 2), enter 25# . Press 1 for Dial Settings. Press 1 for Dial Setting ON, press 1 again for the individual dial settings. The menu announces which of the 8 dial positions are ON, and

> **Enter Dial setting 1 to 8**

Press the number (1 to 8) corresponding to your mobile phone . Press F to end.

Arm to Away Mode. Press the Door bell. If you have programmed the dial settings and the phone number correctly, the mobile phone will ring. Remember that you must say something before Comfort announces the Alarm type, “Door Bell”. For this alarm type, you do not need to sign in. Press 1 to talk to the Door Station. To end, press #, or hang up.

Opening the Door or Gate

A door strike or automatic gate can be controlled from the Door Station Menu to open the door for the visitor.

To do this, Location 52 must be programmed with the Response which opens the door,

Assume that a a door strike or automatic gate is controlled by sending a 1 second pulse on output 1.

Response 79 = 130, 20, 1 gives a 1 second pulse on Output 1. Go to Locations Menu (Engineer Menu 7,4,1) enter 52#, and enter 79# in that location. Press # to exit.

Press the door bell again. Answer the Keypad or phone. The menu this time is

> **Press 1 for Door Station**
> **7 to Open Door**

Press 7 to Open the door. You should see the lamp on Output 1 turn on for 1 second. If Location 52 is programmed with 0 or 255, the item “7 to Open Door “will not be heard.

If location 1686 is programmed with a Response, key 4 can be pressed to open a second door or gate

> **Press 1 for Door Station**
> **4 to Open Gate**
> **7 to Open Door**

If Location 1686 is programmed to 0 or 255 , “4 to Open door” will not be heard.

Door Station Recording

The Door Station can be programmed take a message if no one answers

When the Door Station button is pressed and no one answers, i.e. activates the Door Station menu, either in the house or remotely, the Door Station can be programmed to take a message,

first playing the recorded Greeting message and “Leave Your Message after the Tone”. This is done by assigning a Response 95 into Location 1691 (the doorbell response).

R95 = 135,1,30,255.

In Response 95, action 135 has two parameters, mailbox number and elapsed time. The mailbox number is the mailbox 1 to 8 in which the door station message is to be recorded. Elapsed time is the time in seconds to wait before starting the Door Station recording, if no one answers.

This records a message into Mailbox 1 if there is no answer after 30 seconds during all modes.

In Security Off, press the Door Station button and wait. After 30 seconds, the Door Station will play the Greeting message and record the message. This message will be forwarded to the users phone if the phone is assigned to the mailbox.

Now press the button again, but this time, use the house telephone to activate the Door Station. The Door Station will not take a message.

In All Modes, the Door Station also takes a message if the Door Station menu is not activated within 30 seconds from a telephone.

If you would rather the doorphone recording takes place when the system is armed to Away Mode, add the Response 95 to the Doorbell Alarm Type (25) rather than within the actual button press response 233. This function will then follow the modes which are set by the Alarm Type.

Actions & Locations for Door Stations

Location 1691 is for the Doorbell response. A response number entered in this location will be activated when the Doorbell is pressed.

The Doorbell Alarm (Alarm Type 25) Response is activated when the doorbell is pressed in Away or Vacation Mode.

The following Action codes are specially useful for programming of Door Station Functions. Full descriptions of the actions are in the booklet “Programming with Action Codes”

Action 26 - Stop Phone Ring

When the user knows who is at the door and decides not to answer the phone or keypad and go straight to open the door, it can be distracting for the phone to continue ringing while answering the door. This action code stops the phone ringing after the doorbell button has been pressed. Program a Response with action 26, and assign the Response to the Zone for the front door, so that when the door is opened, the phone stops ringing.

Action 133 - Play Reminder on Keypad/Door Station

This action allows a reminder to be played on the Dooor Station. For example

Response X: 133, 3, 49,255 means Play Reminder message 3 on ID 49 which is Door Station 1. If Location 1691 (the Doorbell Response Location) is programmed with the Response X, pressing the doorbell will cause the reminder message 3 to be played on Door Station 1.

Entering the Response number above in the Doorbell Alarm Response will cause the reminder message to be played only when the system is in Away or Vacation mode.

Action 135 - Record Message on a Doorphone

This action allows the Door Station to take a message from the visitor if the user does not answer after a specified time. The message can be programed to go to any mailbox. If there is no answer after the programmed elapsed time, the Greeting Message if any, is played and a message will be recorded from the Door Station microphone. If Door Station recording is required in all security modes at all times, use this Response in Location 1691. If the Door Station recording is required

only if the remote phone does not answer in Away Mode, use the action in the Doorbell Alarm Type 25 Response. Door Station recording can also be activated instead of Door Station dial out if Alarm Type 26 dialout is turned off

Engineers Quick Start Guide.

Connect the Door Station and keypad to the Comfort Panel. Connect a telephone line to the TEL IN socket and a telephone to the TEL OUT socket. Go easy when opening the casings, they are tricky and can break the catches if 'twisted apart' or forced with incorrect sized screwdriver, see Keypad installation leaflet. Check data-line wiring KA-KB and 12V supplies are the correct way round. Leave the detection wiring out with exception of a wire loop in zone 1 & 2.

Sign-In Codes are as follows:

User Code 1 by pressing: *** 1234 #**

Then 9, for Program Menu: *** 1234 # and 9 for program Menu**

To enter **Engineer Menu**, press F 0, to enable engineer access then:
*** 6789 #.**

Power-Up with the 12V battery first! On the keypad, you should hear "Security Off" after a few seconds and the green 'Home' Led should be solidly lit. Now apply mains voltage to the CPU.

Some more things to do first:

To get the **Door Station** to work you'll need to set Location **1674** (number of door stations) to 1 or 2.

Eng Menu 7,4,1, **1674**,# enter 1#

Location **1675** for 'number of Keypads'.

The hash key # acts like an enter or an exit key while in the menus depending on menu.

Now press the reset switch on the main PCB (next to the large program chip U1)

To arm the system either follow the user menu voice instructions or on the keypad, press the 'lock' symbol for Away (final exit door zone 1 must change state before arming takes place) or press the Moon symbol for Night Mode .

Press the Door Station doorbell. The local phone will ring. Answer the phone. You will hear "Press 1 for Door Station". Press 1 to talk on the Door Station.

Enter a mobile phone number in Telephone number 3 (see next item) arm the system, and press the doorbell. When the mobile rings say "hello" so that Comfort can detect that you have answered, and then press 1, now you can talk on the Door Station. Press # to exit.

Troubleshooting Door Station Problems

"Communications Failure 49, 50"

Home LED blinks and "Communication Failure" is reported upon user sign-in probably means a keypad or Door Station is not communicating with the Comfort panel. Once you sign-in *code#, you will hear Communications failure followed by the ID of the failure. No 49 and 50 are Door Stations 1 & 2.

1 Check that the KA, KB connections are not the wrong way round.

Door Station beeps continuously

If a Door Station is beeping continuously, it means that it has not received any RS485 communications on the KA/KB lines for the last 6 seconds. The beeps will continue until any key is pressed or if communication resumes. If it is connected but the Comfort panel is not programmed to communicate with the Door Station (e.g. Location 1674 is set to 0 but Door Station is connected), it will not beep.

1 Check that the KA/KB are connected to KA/KB the correct way round on the Door Stations and Comfort panel.

2 Check that location 1674 is set to the correct number of Door Stations on the system. The Comfort system must be reset after changing Locations 1674 and 1675

Playback of Recording is Distorted

Usually, this is because the Microphone trimmer is set to too high a gain on the main Comfort PCB. Reduce the gain by tuning the MIC trimmer lower (anti-clockwise) on the PCB.

Cannot Hear Two-way Audio for Voice Station or Door Station

Check that the Voice and Mic connections are the correct way round. If the remote phone is unable to hear the Door Station whenever there is a loud sound on the monitored area, you are experiencing a "Shut-Out" phenomenon due to excessive Microphone gain. This high level of microphone signal feeds back into the receive circuit causing the system to think that the remote end is trying to talk, hence switching the communication channel to "talk". The solution is to reduce the level of the microphone trimmer on the Main comfort PCB VR1

Check the settings in some of the Tune Parameter Locations. The following apply to Rev E boards The 1st two columns show Tune Parameter values in the CSXPress Tune Parameter screens to check, while the 2nd 2 columns show the Locations and values to check. Check either the CSXpress or Locations values. Reset Comfort after changing Locations.

Tune Parameter	CS-Xpress Value	Location	Value
32	2,047	112	255
		113	7
33	2,730	114	170
		115	10
34	16,000	116	128
		117	62
35	281	118	25
		119	1
36	16,000	120	128
		121	62
37	-16,000	122	128
		123	193
38	16,000	124	128
		125	62

Tune Parameter	CS-Xpress Value	Location	Value
39	-16,000	126	128
		127	193

Telephone cannot hear Voice Station or Door Station

In Voice Station or Door Station mode, if you cannot listen to the keypad or Door Station even if you keep silent, (i.e. cannot switch to Listen Mode), but the KP or Door Station is able to hear the telephone, try the following steps:

1 Does the problem occur only for 1 unit (keypad or Door Station)? If so it is a problem with the wiring of the MIC wire from the affected Keypad or Door Station, or a faulty microphone on the unit. You can check the MIC and Speaker on all keypads by using the Keypad Intercom mode (F+8). Check that all other keypads can hear. Press a key on other keypads to put that keypad into talk mode and check that the microphone on that unit is working.

2 If all the keypads and Door Stations cannot be heard from the telephone, it may be due to too much background noise around the telephone. Try moving to a quieter area.

3 If the problem still persists, try increasing the gain of the Line to Speaker circuit. This is in Locations 118 and 119 (In CSxpress this is Tune Parameter 35). Change Location 119 from 1 to 0. Change Location 118 from 25 to 125. Reset the Comfort system and test again. (Remote reset is possible on Engineer menu 7,4,2). You can change Location 118 accordingly to increase or decrease the gain (followed by Reset). **Always do a dial test after changing these locations to confirm that dialout is not affected.**

Door Station or Keypad cannot hear voice from telephone

The converse of the previous problem is the telephone voice cannot be heard on the keypad or door station, but the keypad/Door station voice can be heard on the telephone. Try the following steps:

1 If only 1 Keypad or Door Station is unable to hear the telephone voice, the volume control on the keypad or Door Station may be set too low. The SPK wire on the affected unit may be not connected properly, or the speaker may be faulty. A noisy environment around one of the units may also prevent the telephone from getting through.

2 If all the units are not able to hear voice coming from the telephone, the VR1 trimmer for the Microphone circuit on the Comfort PCB may be set too high. Reduce it to the minimum by turning it anti clockwise. If this solves the problem, the trimmer can be adjusted back (clockwise) for higher MIC gain if required. The VR1 trimmer should be close to the minimum (anti clockwise) in most cases.

3 If the problem still persists with VR1 at the extreme anti clockwise position, increase the gain of the Line to Speaker circuit using Locations 118 and 119 (CSXpress Tune parameter 35). Check that Location 119 is set to 1 and Location 118 is set to 25 as in the above table. Increase the value in Location 118 to 250 (maximum 255) to start with, reset and test. **Always do a dial test after changing these locations to confirm that dialout is not affected.**

Telephone hears only Noise from Keypad/Door Station

In this case, you can hear noise on the telephone from the keypad or Door Station. The keypad and Door Station will not be able to hear voice from the telephone because the telephone will always be in Listen Mode. This may happen if the wire run from the Comfort Pcb to the keypad or Door station is very long or is running close to the AC mains.

1. Adjust the VR1 trimmer on the Comfort PCB to the minimum by turning it anti clockwise. If this solves the problem, the trimmer can be adjusted back (clockwise) for higher MIC gain if required. The VR1 trimmer should be close to the minimum (anti clockwise) in most cases.
2. If the problem still persists with VR1 at the extreme anti clockwise position, increase the gain of the Line to Speaker circuit using Locations 118 and 119 (CSXpress Tune parameter 35). Check that Location 119 is set to 1 and Location 118 is set to 25 as in the above table. Increase the value in Location 118 to 250 (maximum 255) to start with, reset and test. **Always do a dial test after changing these locations to confirm that dialout is not affected.**

Door Station cannot Ring the Telephone

If pressing the Door station button cannot ring the local telephone, but the keypad can answer the door station, the problem could be in the Ringer Module. Check that the ringer cable from the Ringer Module to Comfort main PCB is connected correctly.

The problem could also be caused by a telephone or too many telephones connected in parallel. The Ringer cannot drive an unlimited number of telephones

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