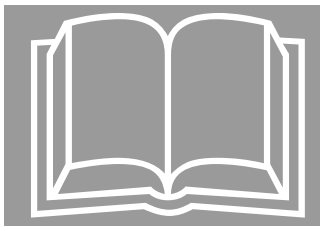
MAY 15, 2012

# UNITEC® PARTS COMPANY

# INSTALLATION PROCESS MANUAL

UT-ID 4.6-8



# ADA Phone Retrofit Kit—
# AAA27076EW1-UNITEC

MAY 15, 2012

# ADA Phone Retrofit Kit

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## Description

The AAA27076EW1-UNITEC is an ADA hands-free speaker phone retrofit kit for the obsolete phone p/n AAA25300W1. The new phone requires a separate 24 VDC power supply and a rechargeable battery. The 24 VDC power is sourced from the existing remote serial link, available in the COP.

Limited field testing of this retrofit improved a number of known issues related to ADA phones—such as, repeated “ghost calls” and poor audio quality.

The following procedure is for the installation of an RS14 PCB, a remote microphone, and a battery holder as well as the wiring of the related harnesses.

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## AAA27076EW1-UNITEC Kit

Figure 1 shows the contents of each AAA27076EW1-UNITEC ADA phone retrofit kit as detailed in Table 1 below.

**Table 1: Kit Supplied with AAA27076EW1-UNITEC Otis ADA Phone Retrofit Kit**

| Item # | Part # | Description | Qty. |
|---|---|---|---|
| 1 | CAA7145E21 | Phone with Line Loss Detector with Microphone | 1 |
| 2 | AAA718J1 | 9V NiMH Rechargeable Battery | 1 |
| 3 | AAA25400BQ1 | Harness, Battery | 1 |
| 4 | AAA174APY2 | Harness, RS14 Phone Power | 1 |
| 5 | AAA174APY3 | Harness, RS14 Communication | 1 |
| 6 | GDA25005B10 | RS14 PCB | 1 |
| 7 | FBA316SL1 | RS14 PCB Carrier | 1 |
| 8 | AAA250S2 | Insert, Graphic Phone Plate with LED | 1 |
| 9 | AAA141AN2 | Anchors (Needs #22 or 5/32 drill bit, 0.157 in.) | 4 |
| 10 | VP-420422 | Alcohol Wipes<br>**NOTE:** This part number is a 50 ct. box, kit contains only a single wipe. | 1 |
| 11 | AAA629AD101 | Lens, Red, for Graphic Insert | 1 |
| 12 | TIP 4.6-8 | ADA Retrofit Kit Installation (Not Shown) | 1 |

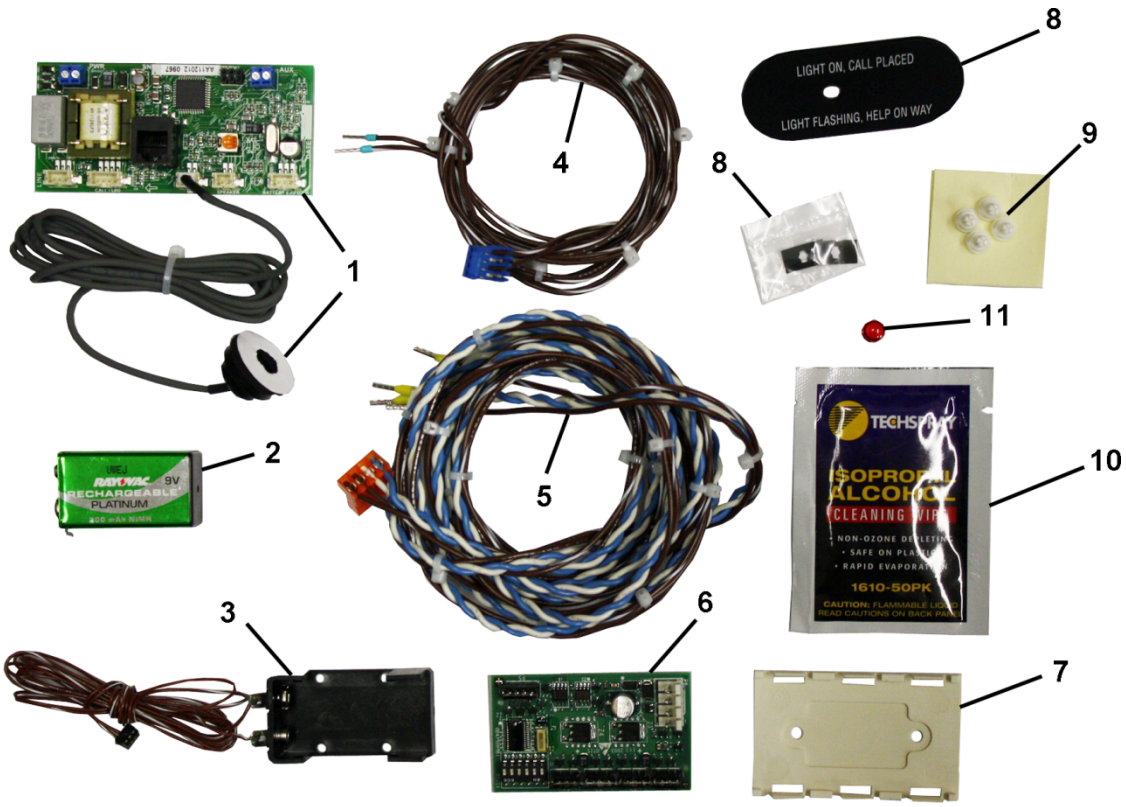


**Figure 1: AAA27076EW1-UNITEC Phone Installation Kit**

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## Mechanical Installation

The following is a brief summary of the physical installation of the new phone. Before the phone can be wired, the battery and RS14 PCB must be mounted inside the wall box.

### Required Tools and Materials

The following is a list of tools and materials required to install the ADA phone retrofit kit.

- ❑ Tamper Resistant Screw Driver (spanner bit) p/n MT-105032-6
- ❑ Small Flat Blade Screwdriver
- ❑ Wago Terminal Block Operating Tool (p/n AAA27EF10)
- ❑ 3/8 in. p/n VP-765450 for Single Hole or Grainger 1TFRA for Multiple Holes
- ❑ 5/32 in. Metal Drill Bit p/n VP-764650
- ❑ Tape Measure
- ❑ Center Hole Punch
- ❑ Digital Multimeter (DMM)
- ❑ Electric Drill
- ❑ Power Cord Adaptor
- ❑ Cable Ties
- ❑ 3 Corner File or Deburring Tool
- ❑ Oil for Drilling
- ❑ Required PPE (gloves, safety shoes, safety glasses, etc.)

### Battery Holder Installation

1. Find a location as close as possible to the existing phone PCB. Mount the battery harness (see Item 3 in Table 1) keeping in mind that the battery harness is 48 in. long.

2. Drill two 5/32 in. holes through the battery holder and into the wall box or subpanel where the ADA phone is installed depending on the type of COP.

3. Mount the battery holder using two snap rivets provided (see Item 9 in Table 1). Insert one snap rivet into each hole and press the center. Refer to Figure 2.

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**Figure 2: Battery Bracket Installation**

4. Insert the battery (Item 2, Table 1) into the holder. Pay careful attention to the terminals on the top of the battery and ensure they snap securely into the terminals on the battery holder.

## RS14 PCB Installation

**NOTE:** If there is any unused I/O on any of the RSL board on the COP within 24 in. from the PCB, skip this step.

1. Find a location as close as possible to the existing phone PCB to mount the RS14 carrier (Item 7, Table 1) keeping in mind that the RS14 phone power harness is 72 in. long.

2. Drill two 5/32 in. holes as before using the RS14 PCB carrier as a template. See Figure 3 below for reference.

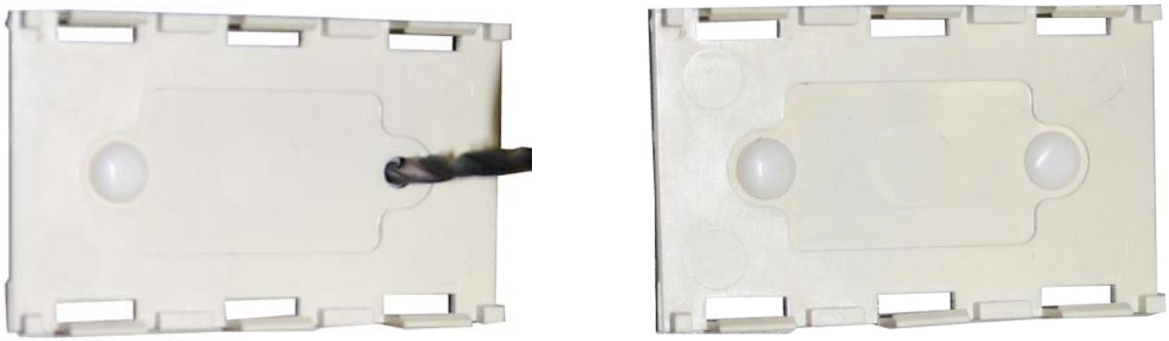

**Figure 3: RS14 PCB Carrier Installation**

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3. Use the remaining two snap rivets provided (Item 9, Table 1) to secure this carrier to the wall box or subpanel depending on the type of COP.

4. Insert the RS14 PCB into the carrier and press firmly until it snaps securely into place. See Figure 4 for reference.

**Figure 4: RS14 PCB Installed in Carrier**

## Microphone Installation

1. Locate the phone plate with LED insert on the faceplate of the COP. See Figure 5 for reference.

**Figure 5: Phone Plate with LED Insert**

2. Remove this plate to expose the opening in the COP.

3. Draw a straight line from phone plate mounting holes. Refer to Figure 6 for details.

4. Draw a vertical line 0.75 in. from the center of the right hand mounting hole according to Figure 6.

5. Use a center punch to make a mark at the intersection of the horizontal and vertical line.

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6. Ensure that there is nothing behind this area.

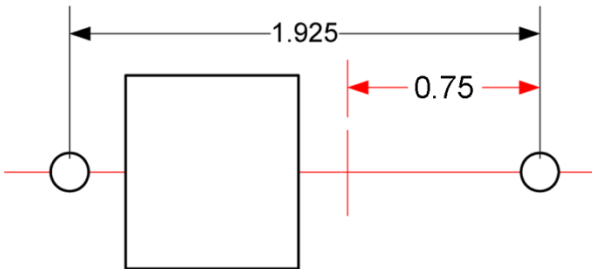


**Figure 6: Mark up Drilling Hole on COP**

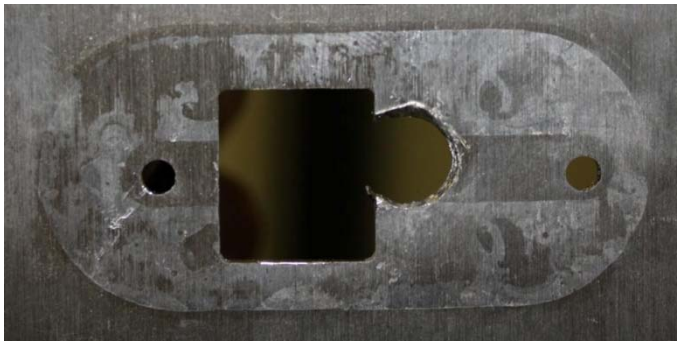

**Figure 7: 3/8 in. Hole Drilled Behind Phone Plate**

7. Drill a 3/8 in. hole in the COP faceplate. Use Figure 6 as a reference. Once the hole has been drilled, be sure to deburr to remove sharp edges with a file.

8. Clean both sides of the faceplate with the alcohol wipe provided (Item 10, Table 1) to ensure proper adhesion of the phone plate to the front of the panel and the microphone to the back of the panel.

9. If the original phone plate removed was plastic, then replace it with the new plate provided (Item 8, Table 1). If the original plate is metal, then reinstall the original plate.

10. Reinstall the LED into the new LED holder (Item 11, Table 1) on the plate. Be sure to put the LED lens into the graphic insert before installing LED.

11. Remove the protective tape from the microphone (comes with item 1 listed in Table 1).

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12. Center the microphone over the 3/8 in. hole and press firmly ensuring that the adhesive makes good contact with the back of the faceplate. See Figure 8 for reference.

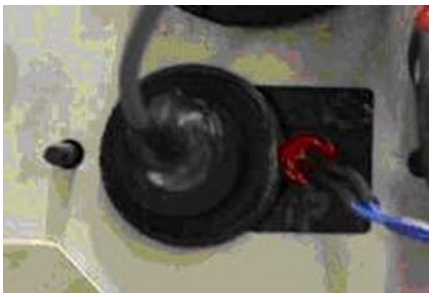

**Figure 8: Microphone Positioning**

13. A small amount of hot glue must be added to the foam pad on the microphone and between LED and LED housing for added bonding strength when securing the microphone and LED to the panel. Be careful to ensure no part of the microphone is obstructed if hot glue is used.

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## New Phone PCB Installation and Wiring

Following is a brief summary of the physical installation of the new phone.

### Attaching Wiring Harnesses

Many of the connections between the existing Otis phone and the new phone have been kept the same. Do not remove the existing Otis phone PCB until all of the harnesses have been transferred to the new one. These harnesses will be exchanged one at a time, and then the three new harnesses will be installed. Below is the procedure for connecting these harnesses to the new phone PCB.

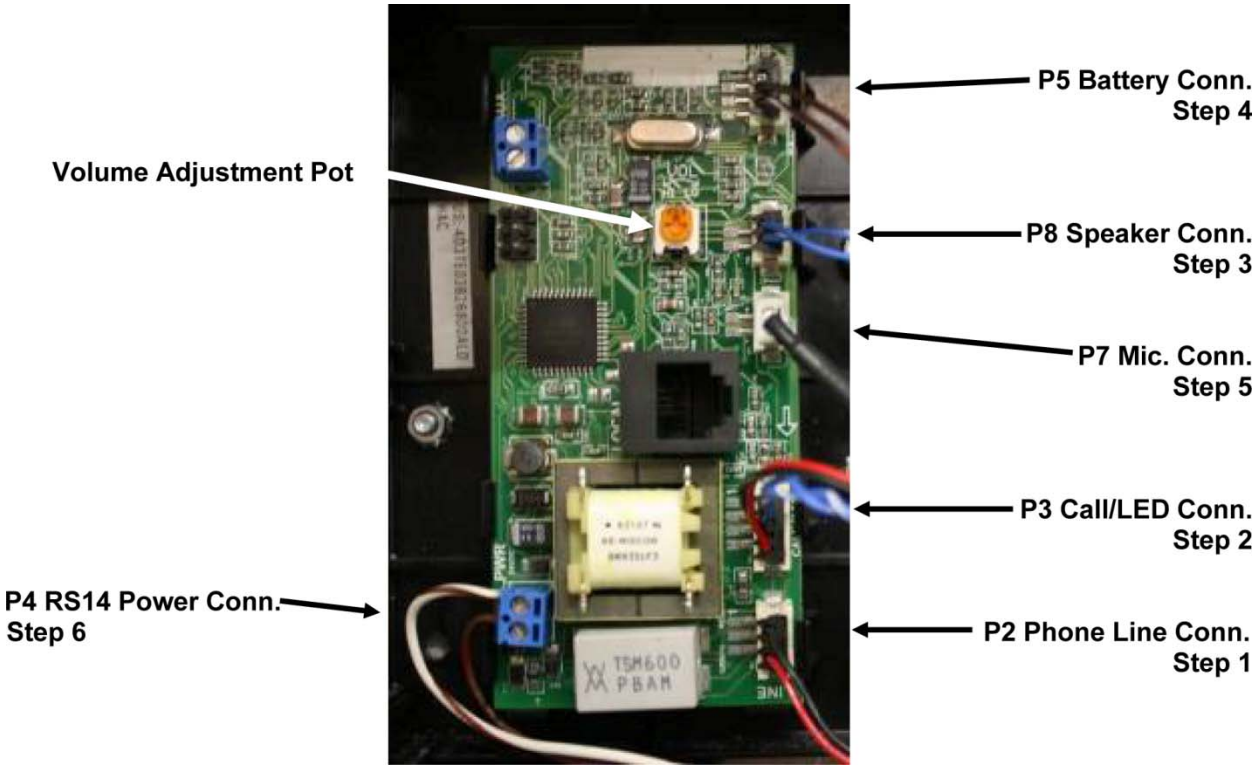


**Figure 9: ADA Phone Connections**

1. Transfer the phone line connector (3-position) from P1 of the existing phone PCB to P2 of the new PCB. See Figure 9 for reference.

2. Transfer the Call/LED connector (4-position) from P2 of the existing phone PCB to P3 of the new PCB. See Figure 9 for reference.

3. Transfer the speaker connector (2-position) from P4 of the existing phone PCB to P8 of the new PCB. See Figure 9 for reference.

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4. Remove the battery connector (3-position) entirely from P6 of the existing PCB and discard. A new harness has been provided (Item 3, Table 1) for the new PCB. Plug this new harness into P5 of the new PCB.

5. Connect the wire from the newly installed microphone (from Section 3.4) to P7 (2-position) on the new phone PCB.

6. Attach the 4-position connector end of the RS14 phone power harness (Item 6, Table 1) to the RS14 PCB (P1, P2, P3, or P4). Attach the ferrule end to P4 of the new phone PCB using the small flat blade screwdriver with brown wire to the + (positive) terminal and the brown/white wire to the - (negative) terminal of the PWR connector on the new phone PCB. Use Figures 9 and 10 for reference.

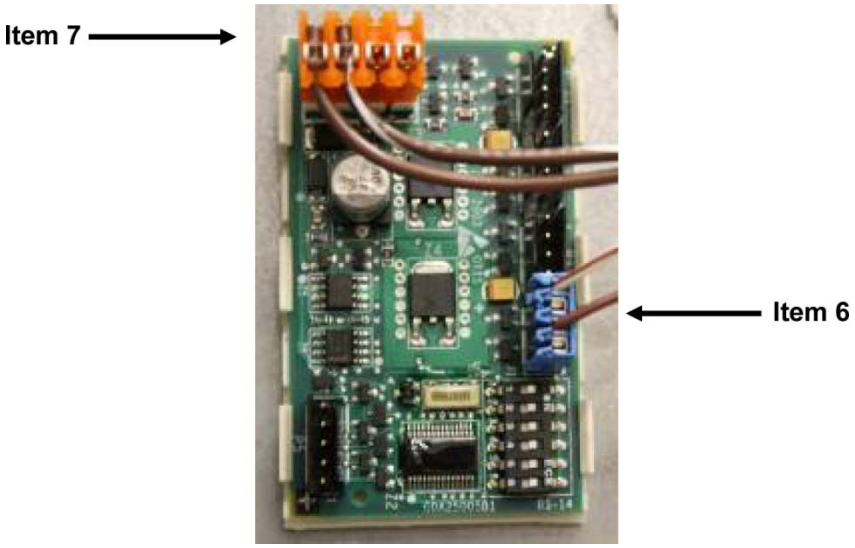


**Figure 10: RS14 PCB Connections**

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**NOTE:** Skip steps 7 and 8 if an existing RSL PCB is used on the COP.

7. Determine where the remote serial link communication cable from the controller is located on the terminal block. Use a DMM to check for 30 VDC on the terminal block.

8. Attach the 4-position connector end of the RS14 communication harness (Item 5, Table 1) to the RS14 PCB, P6. Attach the ferrule end of this cable with the brown wire to the 30 VDC and the brown/white wire to the RTN (or HL2) position on the serial link terminal block in the COP. Use Figures 10 and 11 for reference.

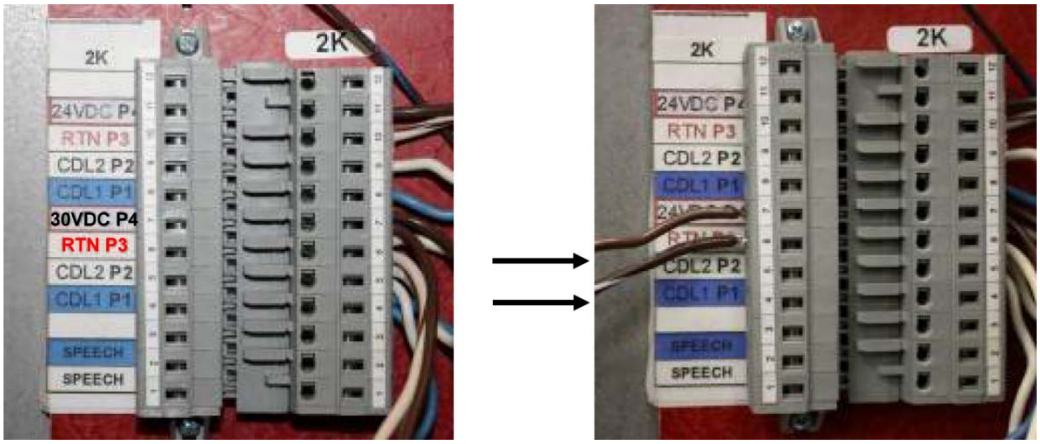


**Figure 11: RS14 Power Connections for Reference Only from Mod COP**

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## Wiring Diagram

For additional information on wiring, see Figure 12.

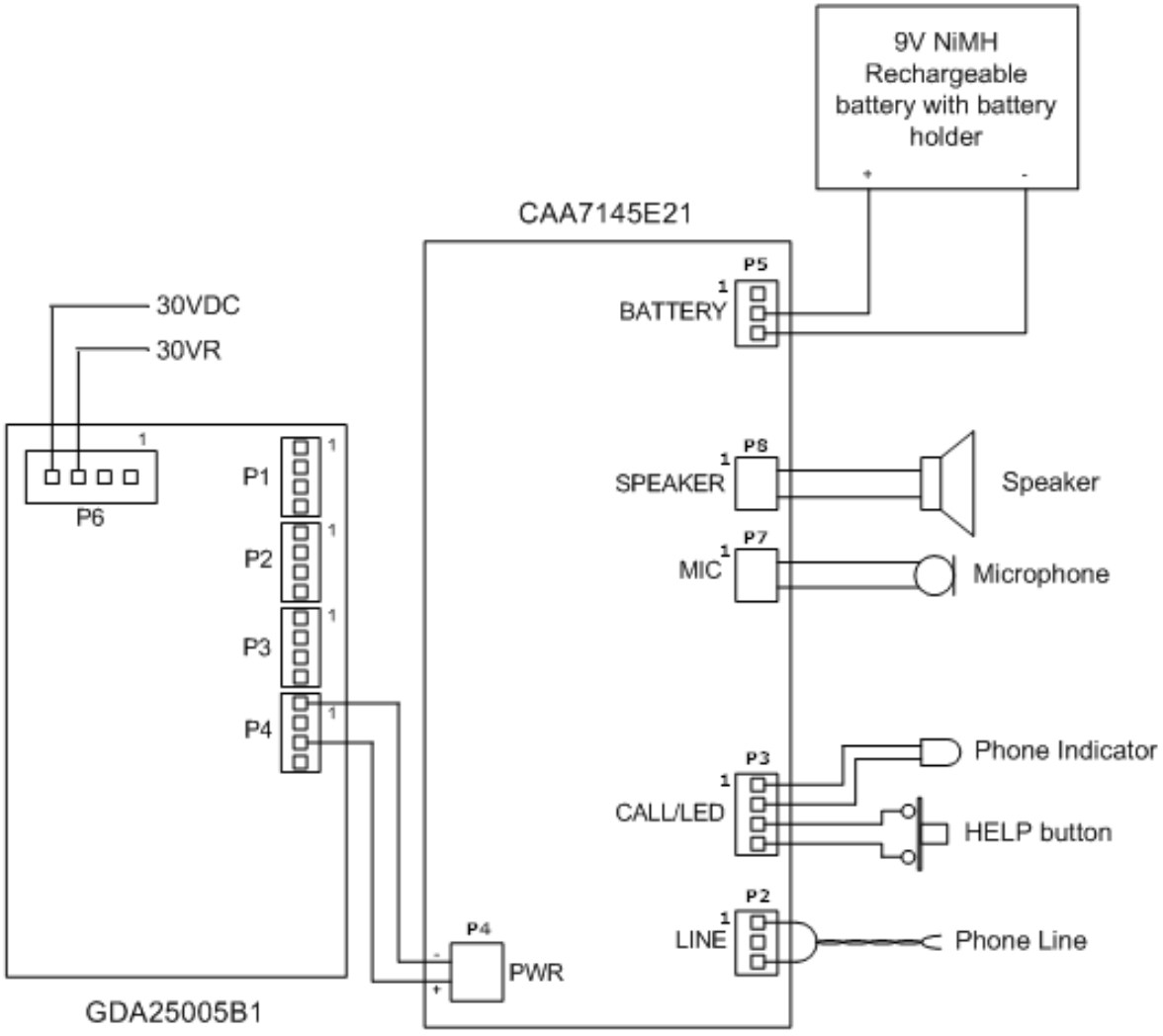


**Figure 12: Electrical Schematic**

## Inserting New Phone PCB

Once all of the connections have been made to the new PCB, remove the Otis ADA phone from its carrier and insert the new one (Item 1, Table 1). Press firmly until this PCB snaps into place. Lastly, secure the wires in the COP. This completes the installation of the p/n AAA27076EW1-UNITEC ADA phone retrofit kit.

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## Phone PCB Programming

1. Ensure that all information related to this elevator, such as phone number of this ADA phone, name and address of the building and contract number, are available.

2. If this phone is calling a desk phone (ring down) or off-site service center, program this phone base on the programming instruction found in Appendix A.

## Phone PCB Functional Test

1. Press the HELP button on the COP, the phone will dial OtisLine.

2. Wait until two-way communication is established, then request that the OtisLine personnel identify the location of the elevator.

3. Adjust the volume of the speaker by turning the pot on the phone PCB if necessary. Refer to Figure 9 for the location of the pot.

4. The ADA phone will shut off once OtisLine personnel hang up the phone or it will timeout after three minutes.

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## Appendix A: Programming Setup Methods

There are two methods of setting up the phone for programming. Select the one applicable to your situation as described below.

**NOTE**: The telephone line provided must be a touch-tone line.

The phone can be programmed at any location and then installed in the elevator cab. The phone will retain its programming without the need for a battery.

### Method A: Calling the Elevator Phone to Program It

1. From any touch tone phone call the phone number to which the elevator phone is connected.

2. After four rings (or if the HELP button is pressed), the elevator phone will turn on automatically and you will hear a “diddle – diddle – diddle” sound.

**NOTE:** If there is more than one elevator phone on the same phone line, you will need to have someone press the HELP button on each elevator phone, or disconnect the others, in order to program each ADA phone.

3. Go to the “PROGRAMMING INSTRUCTIONS” section to continue.

4. After programming the ADA phone, you should test it by pressing the HELP or CALL button. The test will assure the phone is functioning correctly and as programmed.

### Method B: Set Up for Programming Without a Phone Line

1. Disconnect phone line from the phone.

2. Make sure you have external power or a 9-volt battery connected to the phone.

3. Plug a touch-tone phone into the black modular LOCAL jack. (See diagram of phone board).

4. Pick up the touch-tone phone handset.

5. Press the HELP or CALL button on the elevator car panel for the phone to turn ON. Make sure that the red light of the phone turns on. REFER TO THE PROGRAMMING INSTRUCTIONS, after programming, returns to step 6 below.

6. Unplug touch-tone phone and test the phone completely when the ADA phone is hooked up to a phone line.

**NOTE:** You have 30 seconds to enter programming mode or between entering programming commands before the phone will exit the programming mode and turns OFF.

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## Appendix B: Programming Instructions

1. Choose programming setup method A or B from Appendix A.

2. Enter # **94851** to get into the programming mode. Listen for three beeps.

**NOTE 1:** Enter touch tone digits slowly and deliberately.

**NOTE 2:** Once you are in the programming mode, you can perform any programming step in any sequence as long as you get three beeps after your programming entry.

3. Enter # **0** (enter the first phone number to be programmed) ***** #. Listen for three beeps.
   EXAMPLE: # **0 5551212 *** #.

**NOTE:** If you are on a phone line that requires a "9" or another digit to call the answering service, enter # after the 9. This will insert a four second pause. EXAMPLE: # **09** # **5551212 *** #.

4. Enter # **1** (enter the second telephone number to be programmed) ***** #. (Optional)

5. Enter # **2** (enter the third telephone number to be programmed) ***** #. (Optional)

6. Enter # **3** (enter the fourth telephone number to be programmed) ***** #. (Optional)

7. Enter # **7** and listen for the single beep. At the beep, record the **location message** by speaking into the touch-tone phone handset. Enter **0** to end. The message will automatically play back for preview, to listen to the location message again without changing it, enter # **8**.

8. Enter # * **1180183 *** # and listen for three beeps (enables voice prompt messages).

9. Enter # # to hang up the phone.

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## Appendix C: Programming Instructions for Ring Down Telephone Line

The purpose is to eliminate Autodialing for the Ring Down Telephone Line. Use the programming method B from Appendix A for programming.

1. Enter # 94851 and listen for three beeps.
2. Enter # 0 * #, listen for three beeps.
3. Enter # 1 * #, listen for three beeps.
4. Enter # 2 * #, listen for three beeps.
5. Enter # 3 * #, listen or three beeps.
6. Enter # * 1180180 * #, listen for three beeps.
7. Enter # # and turn off the phone by removing 9V battery.

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# Appendix D: Part Numbers

The following table lists all part numbers this document mentions.

**Table 2: Related Part Numbers**

| Description | Part Number |
|---|---|
| Phone with Line Loss Detection and microphone | CAA7145E21 |
| 9V NiMH Rechargeable Battery | AAA718J1 |
| Harness Battery | AAA25400BQ1 |
| Harness, RS14 Phone Power | AAA174APY2 |
| Harness, RS14 Communication | AAA174APY3 |
| RS14 PCB | GDA25005B10 |
| RS14 PCB Carrier | FBA316SL1 |
| Insert, Graphic Phone Plate with LED, English | AAA250S2 |
| Anchors | AAA141AN2 |
| Alcohol Wipers | VP-420422 |
| Lens, Red for Graphic Insert | AAA629AD101 |
| Wago Terminal Block Operating Tool | AAA27EF10 |

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