



NH209TT-2 Amplifier and Power Supply Installation and Use Instructions Used with the HT3009 and/or HT2009 Series Inside Handset Intercom Stations

APPLICATION

The NH209TT-2 series intercom system allows one or more HT3009 and/or HT2009 series inside handset stations to communicate with a maximum of one door entry station, and to release the door opener at the door entry station. A number of optional accessories are available to provide a complete entry intercom signaling and communications system.

PROCEDURE

1. Read installation instructions for each unit to determine equipment location and installation method.
2. Install housings and wiring.
3. Install equipment.
4. Check wiring and connect. Observe all local and national electrical and building codes.
5. Apply power and check operation.

HOUSING INSTALLATION AND EQUIPMENT LOCATION

INSIDE HANDSET STATIONS

Locate stations where needed at convenient speaking height, about 4.5 feet (137cm) from the finished floor. Handset can be secured directly to the finished wall surface or can be mounted over a single gang electrical 'gem' box or single gang electrical plaster ring.

OUTSIDE STATION

Locate door station at convenient speaking height on exterior wall near entrance.

NH209TT-2 AMPLIFIER/POWER SUPPLY

The NH209TT-2 amplifier mounts directly behind the speaker/microphone at the door entry station. It must be located away from any source of direct heat or extreme cold and in an accessible location. Keep at least 3 feet (1 meter) away from transformers, light dimmers or other electrical devices or wiring or sources of electrical interference.

TRANSFORMER

The T1240 plug-in type transformer may be plugged into a standard 117VAC outlet, preferably within 50' (15 meters) of the amplifier, but no closer than 3 feet (1 meter) from the NH209TT-2 amplifier.

MULTI ENTRY ADAPTOR

The NH209TT-2 system can only be used with one (1) door entry station, and cannot be used for multiple door applications. Therefore, there is no multi entry adaptor available.

The DO-001 (or equivalent 12VAC type) electric door release is installed in the door jamb in place of the regular door strike plate.

WIRING

INSIDE HANDSET STATIONS

Run 1 conductor (common) and 1-conductor (selective) #22AWG cable from station to station and to the NH209TT-2 amplifier. Additional cables may be used to serve other stations on other risers (lines). Cables may be straight or twisted pair type and may be solid or stranded conductors.

Route cable away from AC power wiring, transformers, fluorescent lights, light dimmers or other electrical devices. Protect cable from damage. Shielded cable should be used if AC interference is a concern, or if cables cannot be run adequately spaced away from any source of electrical interference.

DOOR ENTRY STATION (using NH209TT-2)

The NH209TT-2 amplifier/power supply is designed to be mounted behind the speaker/microphone grille on the door entry station. Run 2 conductor #18AWG from the 12VAC transformer to the NH209TT-2 amplifier/power supply. If distance is greater than 50 feet, use #16AWG cable. Cable should be run separately from any intercom or #22AWG wiring. Transformer cable should be a separate jacketed cable. Protect cable from damage.

DOOR RELEASE

Run 2 conductor #18AWG from the electric door release location to the NH209TT-2 amplifier. If distance is greater than 50 feet, use #16AWG cable. Use a separate cable from the intercom cable, and route away from any intercom wiring.

CONNECTIONS

Before connecting, make certain wires are free from shorts or grounds. Make connections as shown on page 4 and as detailed in the following instructions.

INSIDE HANDSET STATIONS

1. Connect terminal 'I' on handset stations to terminal 'I' on other handset stations and to terminal '6' on the NH209TT-2 amplifier/power supply.
2. Connect terminal 'II' on each individual handset station to the DZ209 Diode Board(s) located in the door entry station, corresponding to the push-button at the entry door station, that is used to signal that handset station.
3. Terminals 'Z' and 'K' on each handset station are optional terminals, and are only used if the 'Red Dot' push-button needs to be used to operate an optional function.

DOOR ENTRY STATION

1. The door entry speaker (formerly called terminals '11' and '12' on the older NH209TT amplifier) are factory installed onto connector pins on the NH209TT-2.
2. The microphone (formerly called terminals 'B' and 'U' to terminals '9' and '10' on the older NH209TT amplifier) are factory installed onto connector pins on the NH209TT-2.

TRANSFORMER

1. Connect transformer 12VAC terminals to the 12VAC input terminals ('1' and '2') on the NH209TT-2 amplifier/power supply. Do not use this transformer to power any other device, not included on this system.
2. Do not plug the T1240 (plug-in type) transformer into electrical outlet or connect to 117 VAC until entire installation is complete and checked.

DOOR OPENER

1. Connect wires coming from the 12VAC door opener to amplifier terminals '3' and '4'.

NOTE: use proper gauge wiring to door opener.

NOTE: POLARITY OF AC TYPE DOOR OPENER TERMINALS IS NOT CRITICAL.

DZ209 DIODE BOARD(s)

1. Connect wires coming from terminal '8' on all diode boards together and then to terminal '8' on the NH209TT-2 amplifier.

FINISH INSTALLATION

1. Install stations on housings. Do not overtighten screws.
2. Install amplifier and accessory devices as needed.
3. Plug T1240 transformer into 117 VAC outlet. Observe all local and national electrical and building codes.

TEST AND CHECKOUT

1. At all inside handset stations, make sure the handsets are hung-up and seated properly on the cradle switch, and that no wires were 'pinched' when handset covers were affixed.
2. Check each unit in the system for operation in accordance with the operating instructions.

3. If feedback occurs between stations, reduce volume. Amplifier volume control is preset at the factory, but may be readjusted, if necessary.

NOTE: The Alpha Communications®/factory warranty is void if this system is installed or used in any manner other than described in this manual.

OPERATING INSTRUCTIONS

OUTSIDE DOOR STATION

TO CALL HANDSET: Push button on outside door station to signal inside handset. An electric buzzer will be heard at the inside handset station. If the electric buzzer has been replaced by the optional model R2007 AlphaTone™ unit, an electronic chime warble sound will be heard at the handset station.

INSIDE HANDSET STATIONS

TO REPLY: Lift the inside handset off of its cradle and speak in a normal voice. Conversation is full duplex type (simultaneous talk and listen). If satisfied with the identity of the caller, you may depress the 'Key Symbol' push-button to electrically open the entrance door (if so equipped). An AC type door opener will 'buzz' while operating, indicating permission to enter. When conversation is completed, hang-up handset on its cradle.

TROUBLESHOOTING

If the system fails to operate as required, review operating instructions again. If the equipment fails to operate as indicated in the instructions, check the following points:

1. **ENTIRE SYSTEM DEAD:** Check 12VAC at transformer secondary; wiring between transformer and NH209TT-2 amplifier; connections at amplifier terminals and for 117 VAC at transformer primary.
2. **NO CALL UP BUZZER AT HANDSET:** Check for approx. 12VDC across the two (2) wire leads on the AC buzzer (or R2007) inside handset, when entry station pushbutton is depressed. Temporarily switch handset with one from a functioning location. Check wiring connections at remote handset. Check that wiring inside handset base is not restricting movement of buzzer clapper; temporarily switch handset to another location that is functioning, and try again. Check that entry station pushbutton is making contact, by shorting out the two (2) wires on the back of the button. Check to make sure the DZ209 diode board(s) behind the door entry station are connected properly. The 'HT' side of the DZ209 should connect to the selective 'II' terminals from the remote handsets. The 'T' side of the DZ209 should connect to the

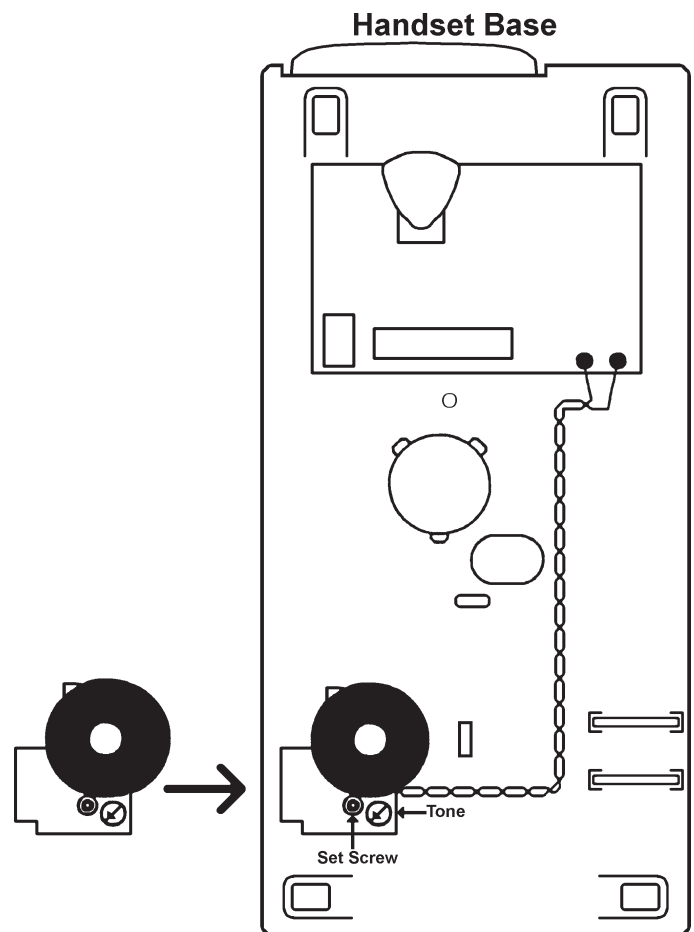
selective terminals from the door entry station push buttons. Make sure diodes on the DZ209 all have the striped sides facing the correct way and they are all facing the same way.

3. **NO VOICE ON SYSTEM:** Check volume control (potentiometers) on NH209TT-2 amplifier (in both directions; up and down). Check terminals to handsets. Check speaker/microphone connections at each entry door station. Connect a single handset at the NH209TT-2 for testing. If voice is working, amplifier and entry speaker/microphone are O.K., so check riser wiring. If not, amplifier or speaker/microphone could be faulty. Check by replacement.
4. **UNABLE TO RELEASE DOOR STRIKE:** Check wiring to handset terminals 'I' and 'II'. Temporarily remove both door opener wires going to amplifier terminals '3' and '4' and touch to terminals '1' and '2' on amplifier. Check operating voltage of door opener matches output from system amplifier. Check wiring (and gauge) to door opener, from amplifier/power supply. When using a magnetic type lock or other 'fail-safe' type door lock, you should use a reversing relay, such as our model# PK407A for each entrance.
5. **HUM OR BUZZ:** Check system wiring installed too close to power wiring or electrical devices or transformers; check transformer(s) installed too close to control equipment (should be at least three (3) feet away). Wiring is being run next to wiring for other systems and/or devices.
6. **SQUEALING OR HOWLING:** Check amplifier volume control(s) set too high; check for loose speaker/microphone at door entry station.
7. **UNABLE TO TALK TO DOOR STATION:** Check terminals 'I' and 'II' going from handsets to amplifier and DZ209 diode boards for continuity and shorts, grounds, etc. Check for proper functioning of door entry station speaker. Check for approx. 16 ohms between terminal '11' and '12' on speaker microphone (with system wiring disconnected).
8. **UNABLE TO LISTEN TO DOOR STATION:** Check terminals 'I' and 'II' going from handsets to amplifier for continuity and shorts, grounds, etc. Check for proper functioning of door entry station microphone.

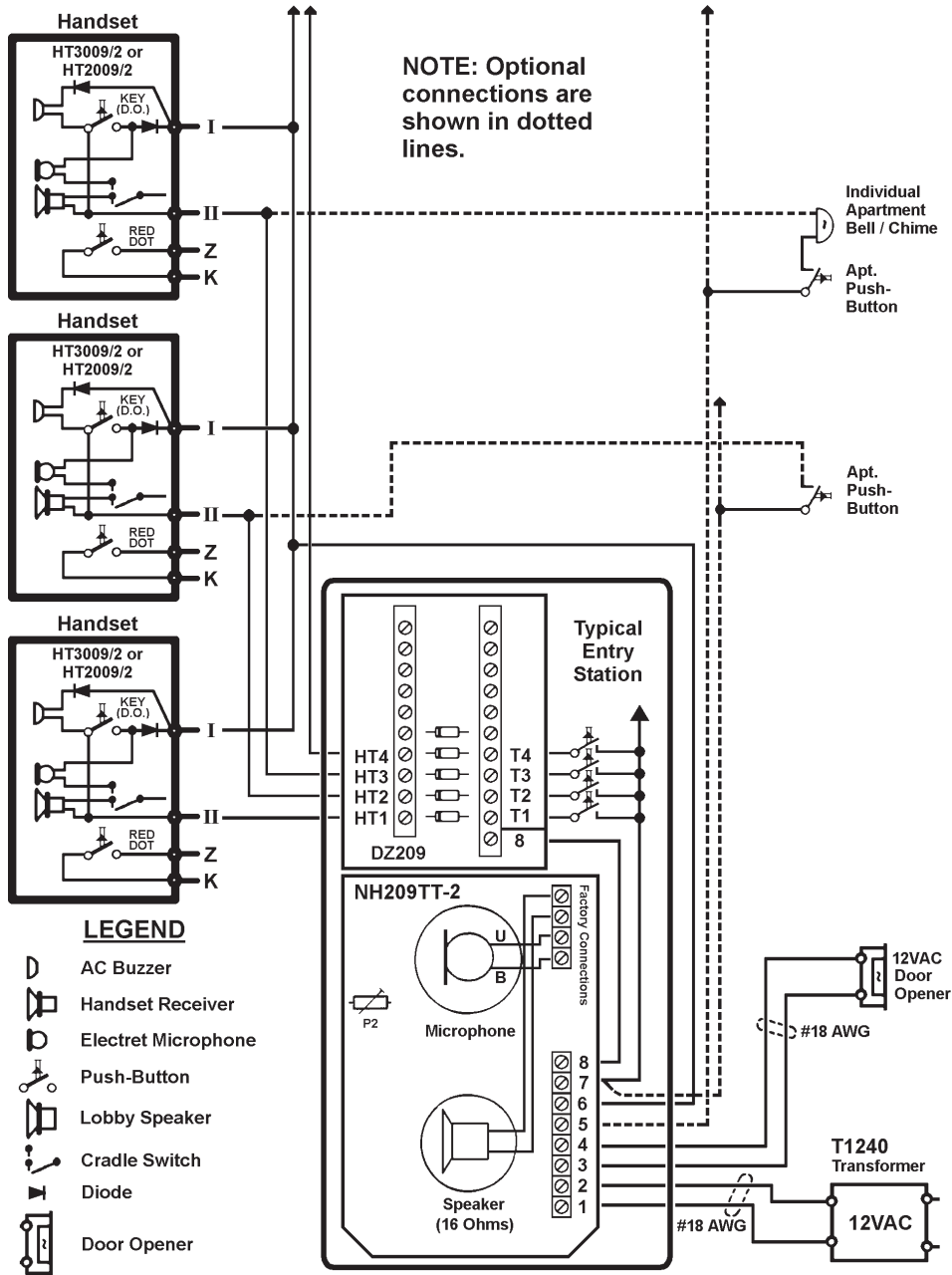
If these checkpoints fail to indicate the problem, there may be an equipment fault. Contact the factory or qualified service representative.

INSTALLING THE R2007 AlphaTone™: When you wish to replace the standard AC buzzer in the HT3009 series handsets with the optional model R2007 AlphaTone™ unit, please follow these instructions: (for HT2009 series handsets see wiring diagram# AWD077).

1. Locate the silver AC buzzer in the lower left portion of the handset base. Remove the set screw (and keep it for reuse).
2. Gently pull up the two (2) wires from the buzzer that are attached to the internal p.c. board. Carefully slide the wires off of the connecting posts.
3. Install the R2007 AlphaTone™ in place of the buzzer, using the buzzer set-screw.
4. Install the two (2) wires onto the p.c. board, using the same connecting posts that the buzzer used. **Polarity does matter.** If the R2007 unit fails to signal when called from the door entry push button, reverse the two (2) wire leads and try again.
5. Position the wires inside the handset base, so they will not get 'pinched' when the cover is placed over the base.
6. Using a small screwdriver, you can change the AlphaTone's sound, by adjusting the built-in potentiometer found on the p.c. board of the R2007.



TYPICAL WIRING LAYOUT DIAGRAM FOR A SINGLE ENTRANCE SYSTEM



Notes:

1. Use #18AWG wiring to transformer and door opener. All other wiring can be #22AWG.
2. Talk down volume can be adjusted using volume control (potentiometer) on NH209TT-2 amplifier/power supply.
3. When connecting to a magnetic door lock or other 'fail safe' type door lock, use the optional model PK407A specialty relay, for each entrance door lock.
4. If the NH209TT-2 amplifier is not mounted behind the entry door station, and is mounted remotely, we recommend using shielded cable from the speaker/microphone wires to the NH209TT-2 amplifier/power supply.
5. Transformer and door opener wiring **MUST NOT** be in same cable as handset wiring!!!
6. Observe all local and national electrical and building codes.

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