

NCI Technologies



User Manual
for
Telecom Paging Amplifiers
Models NCI 20, NCI 50 & NCI 100

FEATURES

- Telephone system interface for paging.
- Full range volume and tone controls.
- Output fully short circuit protected.
- Separate bass & treble controls for paging and music.
- Adjustable background music.
- Adjustable paging pretone.
- Dry contact or VOX music mute (for telephone system applications)
- Integrated connector for optional system expansion modules.
- Wall mounting.
- NRTL/C certified (Complies with both UL & CSA standards)

I M P O R T A N T N O T I C E

Should you require technical assistance during installation, please call our toll-free

Technical Support Line

1-888-633-2666

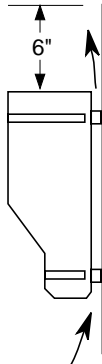
SPECIFICATIONS

• Power output:	NCI 20	20 watts rms	• External Controls	Tel/Mic	Volume
	NCI 50	50 watts rms			Bass ±10 dB @ 100 Hz
	NCI 100	100 watts rms		Nite Bell	Treble ±10 dB @ 20 kHz
• Distortion:		Less than 1% at	• Internal Control		VOX
		1,000Hz rated output			
• Frequency response:		±3 dB, 100 ≈ 20,000Hz	• Output:		70.7 Volts rms
• Inputs:	Tel/Mic	600Ω balanced	• Power source:		120V AC, 60Hz
	Music	10kΩ unbalanced	• Power Consumption:	NCI 20	48 watts
• Sensitivity	Tel	150mV	NCI 50	80 watts	
	Mic	1mV	NCI 100	176 watts	
	Music	100mV			
• External Controls	Pretone	Volume	• Dimensions:		W 12 ³ / ₄ " , H 7 ¹ / ₂ " , D 3"
	Music	Volume			(W 323, H 190, D 76 mm)
		Bass ±10 dB @ 100 Hz		• Weight:	NCI 20
	Treble ±10 dB @ 20 kHz	NCI 50	7.6 lb (3.44 kg)		
		NCI 100	10.7 lb (4.86 kg)		

INSTALLATION

- 1) Mount the amplifier on a wall, or base plate, capable of supporting its weight securely. Use appropriate screws or dowel/screw combination for dry walls.

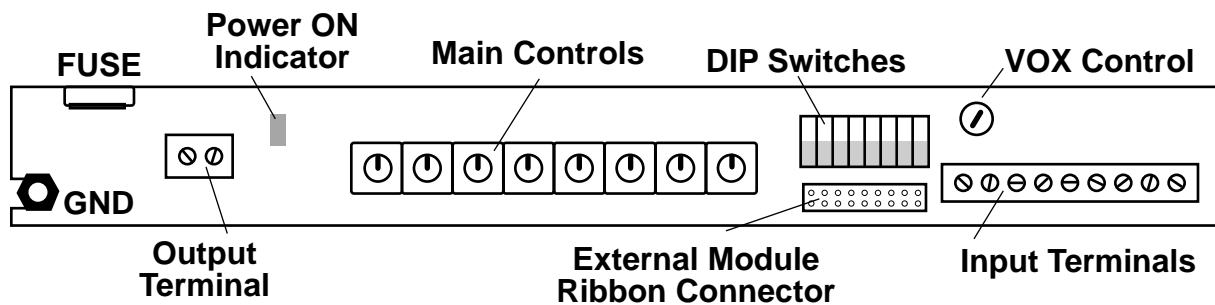
Be sure no radiators or other heat producing elements are nearby. Also be sure that the area behind the amplifier allows a clear path of air to flow behind the amplifier and that the air slots at top and bottom are not obstructed.



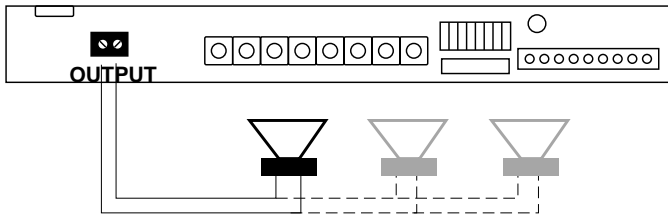
IMPORTANT: To comply with NRTL/C safety regulations, a minimum clearance of 6 inches must be maintained above the unit (see diagram).

- 2) Loosen (do not remove completely) the screw at the bottom of the door to gain access to the terminals of the amplifier.
- 3) Lift the door all the way up. In the fully open position you can conveniently use the screening as a guide to the terminal connections.

CONTROL PANEL LAYOUT



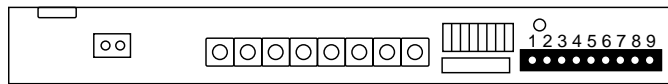
OUTPUT CONNECTIONS



Connect the speaker wiring to the terminal block at the left marked OUTPUT. Follow the guidelines for Class 2 Wiring making sure that the total load does not exceed the rated maximum load as marked on the door of your particular model amplifier.

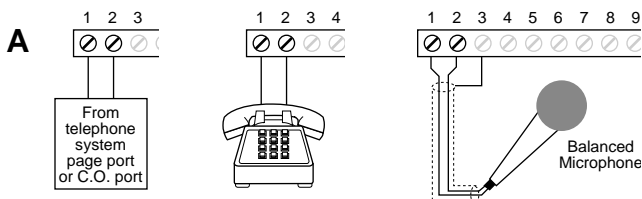
NOTE: To prevent any possible oscillations, ensure that the speaker wires connected to the output connector are kept away from any input wiring connected to the terminal strip described below.

INPUT CONNECTIONS



In accordance with your particular system installation and requirements, make the following connections at the terminal block at the right.

Input Connections

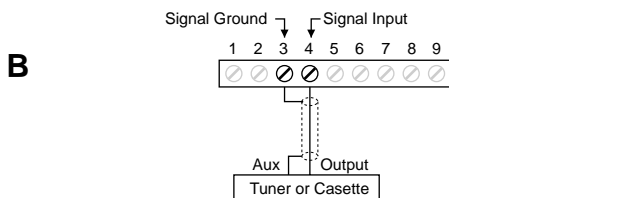


A) Pins 1&2 – TEL/MIC (Balanced Input)

Connect to either the telephone system page port, C.O. port, a telephone set or an external microphone (600Ω balanced - shield to pin 3) to these terminals. Depending on which source is used, DIP switches 1&2 need to be set accordingly.

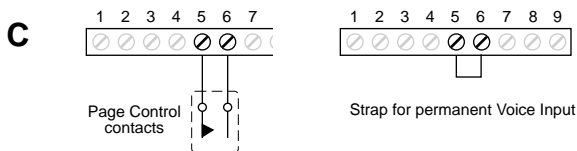
This voice input can only be activated by the page port dry contacts, the VOX circuit, the C.O. port talk battery circuit or a strap across pins 5 & 6
See installation examples on pages 6.

CAUTION: This input must NOT be connected directly to the telephone network.



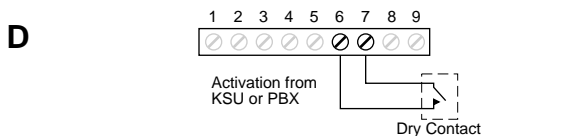
B) Pins 3&4 – MUSIC (Unbalanced Input)

Connect a music source to these terminals noting that pin 3 is a signal ground pin. Reversed connection can cause oscillations. It is important that shielded cable be used to avoid any induced hum.
See installation example F on page 6.



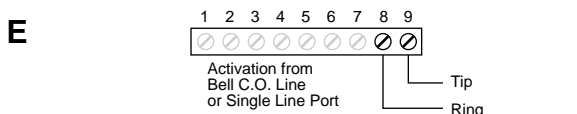
C) Pins 5&6 – MUSIC MUTE

Connect the telephone system page port dry relay contacts to these pins. This will activate the voice input of the amplifier and deactivate the music input (Music mute) thus cutting off the background music. These pins must be strapped if voice input on pins 1 & 2 is to be permanent.



D) Pins 6&7 - NITE RINGER Activation

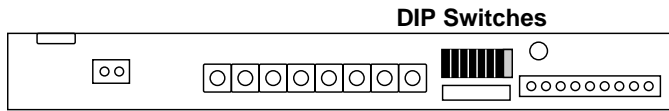
Connect N.O. (normally open) dry relay contact from KSU or PBX to these pins.



E) Pins 8&9 - NITE RINGER Activation

Connect Tip & Ring from Bell C.O. line or phone system single line port.

DIP SWITCH SETTINGS



- A**
- ON ▲ 1 2 3 4 5 6 7 TEL MIC
- B**
- ON ▲ 1 2 3 4 5 6 7 VOX enabled VOX disabled
- C**
- ON ▲ 1 2 3 4 5 6 7 TALK-BATT enabled TALK-BATT disabled
- D**
- ON ▲ 1 2 3 4 5 6 7 PRETONE enabled PRETONE disabled
- E**
- ON ▲ 1 2 3 4 5 6 7 Normal Chime High Frequency Chime

DIP SWITCHES (1-7)

Set the DIP switches according to your particular system installation and requirements as follows.

Note: Switch 8 is not used.

A) DIP Switches 1&2 – TEL/MIC

If connected to a phone system page port set both switches to the ON position.

If an external mic is connected, set both switches to the OFF position.

B) DIP Switch 3 – VOX (Voice activated switch)

Set the switch to the ON position if the VOX option for music mute is to be enabled.

C) DIP Switches 4 & 5 – TALK-BATT. (Talk Battery)

Set both switches to the ON position to enable this function. This option provides talk battery to the telephone set or telephone system C.O. trunk port.

D) DIP Switch 6 – PRE-TONE

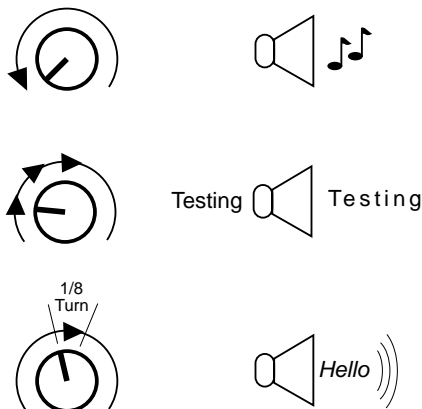
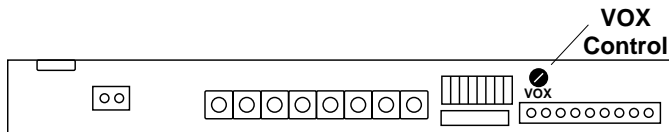
Set this switch to the ON position to enable the Pre-tone function.

E) DIP Switch 7 – NITE RINGER-TONE

Set this switch to the ON position to provide a normal chime tone.

Set this switch to the OFF position to provide a high frequency chime for noisy environments.

VOX CONTROL SETTING



VOX Control Setting

Control setting for **VOX** (Voice activated switch)

This trimpot adjusts the sensitivity of the VOX threshold of the voice (Tel/Mic) input. To adjust the VOX threshold, the following procedure should be followed:

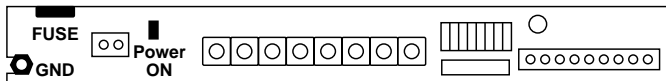
- 1) Set the VOX control fully CCW (background music should be on).
- 2) Have someone, such as the receptionist, make a page call. During the page call slowly turn the VOX control CW until the VOX circuitry triggers, the background music cuts off and the page is heard over the speaker(s).
- 3) Turn the control an additional 1/8 turn CW and leave at this setting.

If the VOX function has a tendency to drop out, slightly increase (CW) the control setting.

Notes:

- 1) The absence of speech for more than 4 seconds releases the VOX and the background music comes back on.
- 2) This adjustment is critical and may require some experimentation.

POWER CONTROL



A) FUSE

Warning Replace only with same type fuse (3AG SloBlo) with rating depending on which model of amplifier you have.

Model	NCI 20	3/4 Amp
	NCI 50	1 1/4 Amp
	NCI 100	2 Amp

B) POWER ON Indicator

Provides indication that the amplifier is powered.

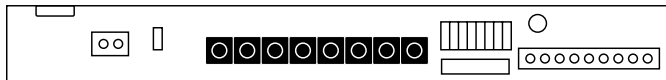
C) GND

A chassis ground post has been provided to allow separate electrical grounding of the unit, if required.

IMPORTANT

Do **NOT** connect signal ground leads to this post.

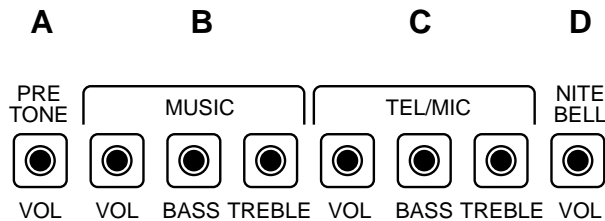
MAIN CONTROLS



MAIN CONTROLS

All user controls are accessible through the front door.

Since these controls are normally set at installation, they purposely protude only slightly from the cover so that they are not accidentally changed from their settings.



A) PRE-TONE Vol

Adjust the level of the pre-tone signal over the speakers.

B) MUSIC Vol-Bass-Treble

Adjust the level and tone of the background music.

C) TEL/MIC Vol-Bass-Treble

Adjust the level and tone of the tel/mic input separate from the music.

D) NITE RINGER Vol

Adjust the level of the nite ringer signal over the speakers.

CLASS B DIGITAL DEVICE WARNINGS

INFORMATION TO USER

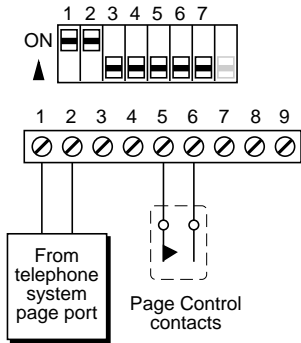
This equipment has been tested and found to comply with the limits for Class B Digital Device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna;
- Increase the separation between the equipment and receiver;
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected;
- Consult the dealer or an experienced radio/TV technician for help.

Any changes or modifications not expressly approved by NCI Technologies could void the user's authority to operate the equipment.

Installation Examples

A - Typical Paging from a Telephone System Page Port with Control Contacts

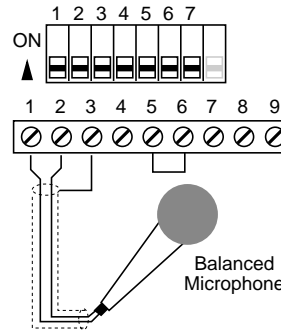


- 1 - Connect voice source to pins 1 & 2
- 2 - Connect page control to pins 5 & 6
- 3 - Set DIP switches as shown

Setting of DIP switch 6 (Pre-tone enable) to the ON position is optional.

Note: The input impedance of pins 1 & 2 is 600Ω balanced.

D - Typical Paging / Public Address using a Microphone and VOX Control for Music Mute



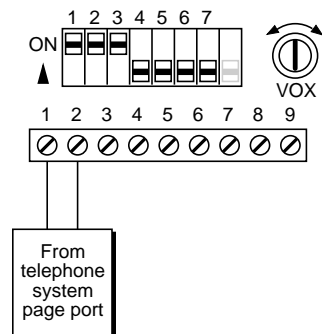
- 1 - Connect mic to pins 1 & 2
- 2 - Connect Mic shield to pin 3
- 3 - Set DIP switches as shown

Setting of DIP switch 6 (Pre-tone enable) to the ON position is optional.

- 4 - Set VOX control accordingly. (See page 4)

Note: Microphone used must be a 600Ω balanced type.

B - Typical Paging from a Telephone System Page Port without Control Contacts



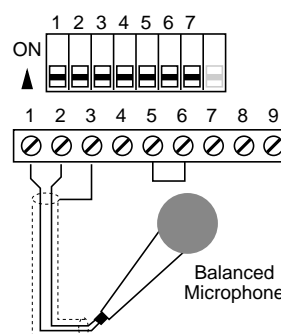
- 1 - Connect voice source to pins 1 & 2
- 2 - Set DIP switches as shown

Setting of DIP switch 6 (Pre-tone enable) to the ON position is optional.

- 3 - Adjust VOX control accordingly. (See page 4)

Note: The input impedance of pins 1 & 2 is 600Ω balanced.

E - Typical Paging / Public Address using a Microphone without Background Music.

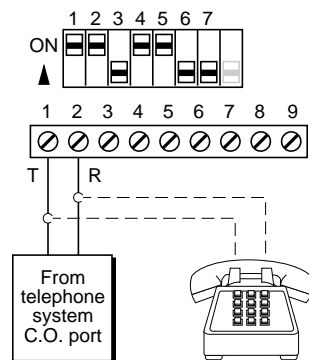


- 1 - Connect mic to pins 1 & 2
- 2 - Connect Mic shield to pin 3
- 3 - Strap pins 5 & 6
- 4 - Set DIP switches as shown

Setting of DIP switch 6 (Pre-tone enable) to the ON position is optional.

Note: Microphone used must be a 600Ω balanced type.

C - Typical Paging from a Telephone System C.O. Port or a Telephone Set

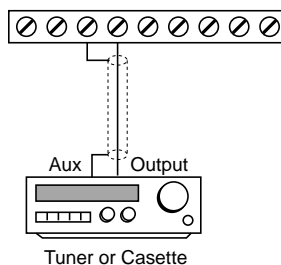


This configuration is normally used in applications where a telephone system is not equipped with a page port.

- 1 - Connect Tip and Ring wires to pins 1 & 2 respectively
- 2 - Set DIP switches as shown

Setting of DIP switch 6 (Pre-tone enable) to the ON position is optional.

F - Typical Background Music



- 1 - Connect music source to pins 3 & 4

Note: The input impedance of pins 3 & 4 is 10kΩ unbalanced.

Important:
A shielded audio cable must be used to avoid any induced hum or oscillations. Be sure the shield is connected to pin 3 while the center signal conductor is connected to pin 4.

THREE (3) YEAR LIMITED WARRANTY

NCI warrants its products to be free from defects in material and workmanship under normal use and service for a period of three (3) years after delivery to the ultimate user. At our discretion, NCI will repair-free-of charge or replace at no charge a product should it, upon examination, be proven defective and under warranty. NCI reserves unto itself the sole right to make the final decision whether there is a defect in materials and/or workmanship, and whether or not the product is within the warranty.

This warranty shall not apply to any NCI product which has been subject to misuse, neglect, accident, or used in violation of instructions furnished, nor extended to units which have been repaired or altered outside of the factory.

This warranty covers bench repairs only. Any repairs must be made at the shop or place designated in writing by NCI. NCI will not be responsible for any costs incurred involving on-site calls.

All implied warranties, including any implied warranty of merchantability or fitness for any particular purpose, are limited in duration to three years from date of original purchase. In no event will NCI be responsible for consequential damages resulting from the use of this product.