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Thank you for using our products.

INSTALLATION INSTRUCTIONS SERIES NH AUDIBLE APPLIANCES

Use this product according to this instruction manual. Please keep this instruction manual for future reference.

GENERAL:

Wheelock's Series NH Audible Appliances provide a selectable continuous or Code 3 Horn tone when connected directly to the Fire Alarm Control Panel (FACP). They can also provide a synchronized Code 3 Horn tone when used in conjunction with a Sync Module (SM), Dual Sync Module (DSM) or the Power Supply (PS-12/24-8 *UL ONLY*). The NH Appliances are UL Listed under Standard 464 for Audible Signal Appliances. The NH Appliances are also ULC Listed under Standard CAN/ULC-S525-99 for Audible Signaling Devices for Fire Alarm Systems. They are listed for *indoor use only* and equipped with a NH Mounting Plate that can be mounted to single-gang, double-gang, 4" backbox, 100mm European backbox or SHBB surface backbox (See Mounting Options).

Series NH Appliances can be field set for High (HI) or Low (LO) dBA sound output.

The NH models are designed for use with either filtered DC (VDC) or unfiltered Full-Wave-Rectified (VRMS) input voltage. All inputs are polarized for compatibility with standard reverse polarity supervision of circuit wiring by a FACP.

NOTE: All **CAUTIONS** and **WARNINGS** are identified by the symbol . All warnings are printed in bold capital letters

riangle Warning: the NH audible appliance is a "fire alarm device - do not paint."

NOTE: All Canadian Installations should be in accordance with the Canadian Standard for the Installation of Fire Alarm Systems - CAN/ULC-S524-01 and Canadian Electrical Code, Part 1. Final acceptance is subject to Authorities Having Jurisdiction.

⚠ WARNING: PLEASE READ THESE INSTRUCTIONS CAREFULLY BEFORE USING THIS PRODUCT. FAILURE TO COMPLY WITH ANY OF THE FOLLOWING INSTRUCTIONS, CAUTIONS AND WARNINGS COULD RESULT IN IMPROPER APPLICATION, INSTALLATION AND/OR OPERATION OF THESE PRODUCTS IN AN EMERGENCY SITUATION, WHICH COULD RESULT IN PROPERTY DAMAGE AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.

⚠ WARNING: THE AUDIBLE HORN APPLIANCES MUST BE FIELD SET TO THE DESIRED TONE AND dBA SOUND OUTPUT LEVEL BEFORE THEY ARE INSTALLED. THIS IS DONE BY PROPERLY INSERTING A JUMPER PLUG IN ACCORDANCE WITH THESE INSTRUCTIONS. INCORRECT SETTINGS WILL RESULT IN IMPROPER PERFORMANCE, WHICH COULD RESULT IN PROPERTY DAMAGE AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.

SPECIFICATIONS:

Table 1: UL/ULC Listed Models and Ratings							
Model	Regulated Voltage	UL Voltage	ULC Voltage CAN/ULC-S525-99	UL Max RMS Current (AMPS)		ULC Rated Average Current (AMPS)	
	(VDC/VRMS)			Lo	Hi	Lo	Hi
NH-12/24	24	16.0-33.0VDC	20.0-31.0VDC	0.018	0.044	0.018	0.033
		16.0-33.0VRMS	20.0-31.0VRMS	0.045	0.075	0.045	0.075
	12	8.0-17.5VDC	10.5-15.6VDC	0.012	0.021	0.012	0.021
		8.0-17.5VRMS	10.5-15.6VRMS	0.030	0.054	0.030	0.054

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Table 2: dBA Sound Output for 24VDC Models							
Reverberant dBA			A	ULC Anechoic dBA Per CAN/ULC-			
Description Volume Per UL 464		_	S525-99				
		16.0VDC	24VDC	33.0VDC	20.0VDC	24VDC	31.0VDC
	Low	77	81	83	88	90	91
Continuous Horn	High	83	87	90	93	95	96
	Low	72	76	79	88	90	91
Code 3 Horn	High	79	82	86	93	95	96

Table 2A: dBA Sound Output for 12VDC Models							
		Reverberant dBA			ULC Anechoic dBA Per CAN/ULC-		
Description	Volume	Per UL 464			S525-99		
		8.0VDC	12VDC	17.5VDC	10.5VDC	12VDC	15.6VDC
	Low	72	76	80	83	84	85
Continuous Horn	High	78	83	86	88	89	90
	Low	67	72	74	83	84	85
Code 3 Horn	High	75	79	82	88	89	90

Table 2B: ULC Directional Characteristics					
20.0-31.0V	Rated output 95dBA	-3 dBA: 48 degrees left, 41 degrees right -6 dBA: 50 degrees left, 58 degrees right			
10.5-15.6V	Rated output 89 dBA	-3 dBA: 45 degrees left, 33 degrees right -6 dBA: 52 degrees left, 45 degrees right			

NOTES:

- Regulated Voltage: NH Audible Appliances are UL Listed to operate over a Voltage Range Limit from 8.0VDC to 17.5VDC for 12VDC applications or 16.0VDC to 33.0VDC for 24VDC applications using filtered DC or unfiltered Full-Wave-Rectified (FWR) input voltage. The ULC Voltage Range for NH Audible Appliances is 10.5-15.6 for 12VDC applications and 20.0-31.0 for 24VDC applications using filtered DC or unfiltered Full-Wave-Rectified (FWR) input voltage.
- 2. All models are UL Listed for indoor use with a temperature range of $+0^{\circ}$ C to $+49^{\circ}$ C ($+32^{\circ}$ F to $+120^{\circ}$ F) and maximum humidity of $93\% \pm 2\%$ RH.

⚠ WARNING: CHECK THE MINIMUM AND MAXIMUM OUTPUT OF THE POWER SUPPLY AND STANDBY BATTERY AND SUBTRACT THE VOLTAGE DROP FROM THE CIRCUIT WIRING RESISTANCE TO DETERMINE THE APPLIED VOLTAGE TO THE SIGNALING APPLIANCE.

MARNING: MAKE SURE THAT THE TOTAL RMS CURRENT AND TOTAL AVERAGE CURRENT REQUIRED BY ALL APPLIANCES THAT ARE CONNECTED TO THE SYSTEM'S PRIMARY AND SECONDARY POWER SOURCES, SIGNALING CIRCUITS, SM, DSM SYNC MODULES AND WHEELOCK'S POWER SUPPLIES DO NOT EXCEED THE POWER SOURCES' RATED CAPACITY OR THE CURRENT RATINGS OF ANY FUSES ON THE CIRCUITS TO WHICH THESE APPLIANCES ARE WIRED. OVERLOADING POWER SOURCES OR EXCEEDING FUSE RATINGS COULD RESULT IN LOSS OF POWER AND FAILURE TO ALERT OCCUPANTS DURING AN EMERGENCY, WHICH COULD RESULT IN PROPERTY DAMAGE AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.

When calculating the total current: Use Table 1 to determine the highest value of "RMS Current" or "Rated Average Current" for an individual horn (across the expected operating voltage range of the horn) then multiply these values by the total number of horns; be sure to add the currents for any other appliances, including visual (strobe) signaling appliances, powered by the same source and include any required safety factors.

CAUTION: Audible Horn appliances set for Code 3 tone are not designed to be used on coded systems in which the applied voltage is cycled on and off.

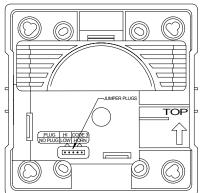
⚠ WARNING: FOR UL APPLIANCES THESE APPLIANCES WERE TESTED TO THE OPERATING VOLTAGE LIMITS OF 16-33 VOLTS FOR 24V APPLICATIONS AND 8.0-17.5 VOLTS FOR 12V APPLICATIONS USING FILTERED (DC) OR UNFILTERED FULL-WAVE-RECTIFIED (FWR). DO NOT APPLY 80% AND 110% OF THESE VOLTAGE VALUES FOR SYSTEM OPERATION.

⚠ WARNING: FOR ULC APPLIANCES THESE APPLIANCES WERE TESTED TO THE OPERATING VOLTAGE LIMITS OF 20.0-31.0 VOLTS FOR 24V APPLICATIONS AND 10.5-15.6 VOLTS FOR 12V APPLICATIONS USING FILTERED (DC) OR UNFILTERED FULL-WAVE-RECTIFIED (FWR). APPLY 80% AND 110% OF THESE VOLTAGE VALUES FOR SYSTEM OPERATION.

SOUND OUTPUT (SPL) SETTINGS:

NOTE: The Code 3 Horn incorporates the temporal pattern (1/2 second on, 1/2 second off, 1/2 second on, 1/2 second on, 1-1/2 off and repeat) specified by ANSI/NFPA for standard emergency evacuation signaling. *The Code 3 Horn should* be used only for fire evacuation signaling and not for any other purpose.

Figure 1: Showing Location of Jumper Plug



The factory setting is on High dB and Code 3.

Figure 2: Jumper plug settings for High dB and Code 3.

Figure 3: Jumper plug settings for Low dB and Continuous Horn.

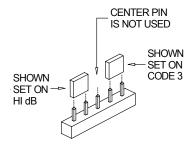


Figure 4: Jumper plug settings for Low dB and Code 3.

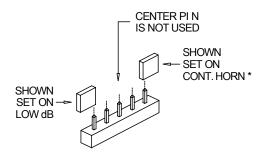
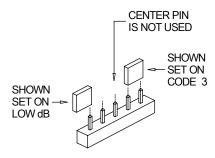
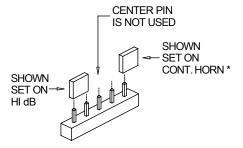


Figure 5: Jumper plug settings for High dB and Continuous Horn.



(Use needle nose pliers to pull and properly set the jumper plugs.)



No jumper plugs are needed for Continuous Horn and low dB settings. However, it is recommended that the jumper plug be retained in the unit for future use (if needed) as shown in Figure 3, 4 and 5.

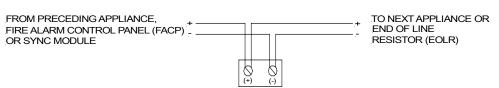
NOTE: The NH must be set for code 3 when used with the sync module.

* Continuous horn operation without sync module.

WIRING INFORMATION:

Figure 6:

Figure 7:





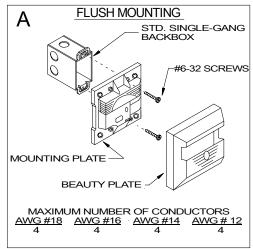
Refer to Sync Module instruction sheets SM (P83123), DSM (P83177) and PS-12/24-8 (P83862) for additional information.

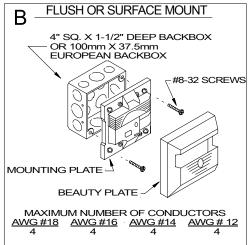
- 1. Appliances have in-out wiring terminals that accepts two #12 to 18 American Wire Gauge (AWG) wires at each screw terminal. Strip leads 3/8" inches for connection to screw terminals.
- 2. Break all in-out wire runs on supervised circuit supervision as shown in Figure 7. The polarity shown in the wiring diagrams is for the operation of the appliances. The polarity is reversed by the FACP during supervision.

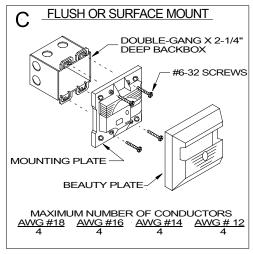
MOUNTING OPTIONS:

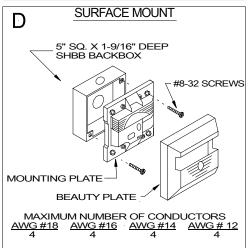
CAUTION: The following figures show the maximum number of field wires (conductors) that can enter the backbox used with each mounting option. If these limits are exceeded, there may be insufficient space in the backbox to accommodate the field wires and stresses from the wires could damage the product.

Although the limits shown for each mounting option comply with the National Electrical Code (NEC), Wheelock recommends use of the largest backbox option shown and the use of approved stranded field wires, whenever possible, to provide additional wiring room for easy installation and minimum stress on the product from wiring.









MOUNTING PROCEDURES:

CAUTION: Check that the installed product will have sufficient clearance and wiring room prior to installing backboxes and conduit, especially if sheathed multiconductor cable or 3/4" conduit fittings are used.

- 1. NH models have an integrated NH Mounting Plate (NHMP).
- 2. The NHMP must be oriented correctly when it is mounted to the backbox. Turn the NHMP so that the arrow below the word "Top" points to the top side of the NHMP.
- 3. NH models can be flush mounted to a standard single-gang backbox (Figure A), 4" or 100mm backbox (Figure B) or double-gang backbox (Figure C). NH models can also be surface mounted to a 4" or 100mm backbox (Figure B), double-gang backbox (Figure C) or the SHBB (Figure D).
- 4. Mount the NHMP first to the backbox. Next slide the Beauty Plate over the NHMP until the 2 side snaps of the NH Beauty Plate engage with the NHMP.
- 5. The NH Beauty Plate can be removed from the NHMP Mounting Plate assembly once engaged. First, gently insert a screwdriver into one of the slots located on the side edges of the NH Beauty Plate. Second, gently pull away from the wall with the inserted screwdriver to disengage the snap. Third, repeat the first and second steps for the second slot. Finally, gently lift the Beauty Plate away from the NHMP.
- 6. Mounting hardware for each mounting option is supplied.
- 7. Conduit entrances to the backbox should be selected to provide sufficient wiring clearance for the installed product.
- 8. When terminating field wires, do not use more lead length than required. Excess lead length could result in insufficient wiring space for the signaling appliance.
- 9. Use care and proper techniques to position the field wires in the backbox so that they use minimum space and produce minimum stress on the product. This is especially important for stiff, heavy gauge wires and wires with thick insulation or sheathing.
- 10. Do not pass additional wires (used for other than the signaling appliance) through the backbox. Such additional wires could result in insufficient wiring space for the signaling appliance.
- 11. The effect of shipping and storage temperatures shall not adversely affect the performance of the appliance when stored in original cartons and are not subjected to misuse or abuse. The NH Audible Appliance is listed for indoor use.

CAUTION: If these appliances are operated within 15 inches of a person's ear, they can produce a sound pressure level that exceeds the maximum 120dBA permitted by ADA and OSHA rules. Exposure to such sound levels can result in damage to a person's hearing.

These appliances can produce a distinctive three pulse Temporal Pattern Fire Alarm Evacuation Signal (for total evacuation) in accordance with NFPA 72.

CAUTION: Check the installation instructions of the manufacturers of other equipment used in the system for any guidelines or restrictions on wiring and/or locating Notification Appliance Circuits (NAC) and notification appliances. Some system communication circuits and/or audio circuits, for example, may require special precautions to assure immunity from electrical noise (e.g. audio crosstalk).

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IMPORTANT: READ SEPARATE "GENERAL INFORMATION" SHEET FOR INFORMATION ON THE PLACEMENT, LIMITATIONS, INSTALLATION, FINAL CHECKOUT, AND PERIODIC TESTING OF NOTIFICATION APPLIANCES.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital appliance, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in residential installation. This equipment generates, uses 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: 1) Reorient or relocate the receiving antenna, 2) Increase the separation between the equipment and receiver, 3) Connect the equipment into an outlet on a circuit different from that to which the receiver is connected, and 4) Consult the dealer or an experienced radio/TV technician for help.

Limited Warranty

Wheelock products must be used within their published specifications and must be PROPERLY specified, applied, installed, operated, maintained and operationally tested in accordance with these instructions at the time of installation and at least twice a year or more often and in accordance with local, state and federal codes, regulations and laws. Specification, application, installation, operation, maintenance and testing must be performed by qualified personnel for proper operation in accordance with all of the latest National Fire Protection Association (NFPA), Underwriters' Laboratories (UL), Underwriters' Laboratories of Canada (ULC), National Electrical Code (NEC), Occupational Safety and Health Administration (OSHA), local, state, county, province, district, federal and other applicable building and fire standards, guidelines, regulations, laws and codes including, but not limited to, all appendices and amendments and the requirements of the local authority having jurisdiction (AHJ). Wheelock products when properly specified, applied, installed, operated, maintained and operationally tested as provided above are warranted against mechanical and electrical defects for a period of three years from date of manufacture (as determined by date code). Correction of defects by repair or replacement shall be at Wheelock's sole discretion and shall constitute fulfillment of all obligations under this warranty. THE FOREGOING LIMITED WARRANTY SHALL IMMEDIATELY TERMINATE IN THE EVENT ANY PART NOT FURNISHED BY WHEELOCK IS INSTALLED IN THE PRODUCT. THE FOREGOING LIMITED WARRANTY SPECIFICALLY EXCLUDES ANY SOFTWARE REQUIRED FOR THE OPERATION OF OR INCLUDED IN A PRODUCT. WHEELOCK MAKES NO REPRESENTATION OR WARRANTY OF ANY OTHER KIND, EXPRESS, IMPLIED OR STATUTORY WHETHER AS TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER MATTER.

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