

Thank you for using our products.

**INSTALLATION INSTRUCTIONS
 SERIES NS TWO WIRE APPLIANCES
 (WALL MOUNT VERSIONS)**

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

GENERAL:

Wheelock's Series NS Horn Strobe Appliances require only 2-wires for operation of the horn and strobe appliance and provide a selectable continuous or Code 3 Horn tone and continuous strobe when connected directly to a fire alarm control panel (FACP). They can also provide a synchronized Code 3 Horn tone and synchronized strobe when used in conjunction with a Sync Module (SM), Dual Sync Module (DSM) or Wheelock power supplies. They are the ideal choice for applications where the audible silence feature is required. The NS Appliances are UL Listed under Standard 1971 for Signaling Devices for the Hearing Impaired and UL Standard 464 for Audible Signal Appliances. The 24V NS is also ULC Listed under Standard CAN/ULC-S526-02 for Visual Signaling Appliances and Standard CAN/ULC-S525-99 for Audible Signaling Appliances for Fire Alarm Systems. The 1575W candela wall mounted strobes are listed at 15 candela under UL Standard 1971 and meet 75 candela intensity on axis with low current draw. They are listed for **indoor use only** and equipped with a NS nounting plate (NSMP) that can be mounted to single-gang, double-gang, 4" backbox, 100mm European backbox or SHBB surface backbox (See wiring and mounting information). These strobe models are Listed for **wall mounting only**. The NS appliances uses a xenon flashtube with solid state circuitry enclosed in a polycarbonate lens to provide maximum visibility and reliability for effective visible signaling.

Series NS Appliances can be field set for high (HI) or low (LO) dBA sound output.

These strobe models are designed for use with either filtered DC (VDC) or unfiltered full-wave-rectified (FWR) input voltage. All inputs are polarized for compatibility with standard reverse polarity supervision of circuit wiring by a FACP.

NOTE: The Code 3 temporal pattern (1/2 second on, 1/2 second off, 1/2 second on, 1/2 second off, 1/2 second on, 1-1/2 off and repeat) is specified by ANSI and NFPA 72 for standard emergency evacuation signaling. **The Code 3 Horn should be used only for fire evacuation signaling and not for any other purpose.**

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 (AHJ).

⚠ 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.

SPECIFICATIONS:

| Models | Regulated Voltage (VDC/VRMS) | Voltage Range Limit Per UL 464 and UL 1971 (VDC/VRMS) | Voltage Range Per CAN/ULC-S526-02 And CAN/ULC-S525-99 (VDC/VRMS) | Strobe Candela (cd) | |
|-------------|------------------------------|-------------------------------------------------------|------------------------------------------------------------------|---------------------|-----|
| | | | | UL | ULC |
| NS-241575W* | 24 | 16.0-33.0 | 20.0-31.0 | 15 | 75 |
| NS-121575W* | 12 | 8.0-17.5 | ----- | 15 | -- |

* 1575W models are UL Listed for 15cd and meet 75cd on axis. NS-121575 is not ULC approved.

| Description | Volume | Reverberant Per UL 464 | | | Anechoic Per CAN/ULC-S525-99 | | |
|-----------------|--------|------------------------|---------|---------|------------------------------|---------|---------|
| | | 16.0VDC | 24.0VDC | 33.0VDC | 20.0VDC | 24.0VDC | 31.0VDC |
| Continuous Horn | Low | 77 | 81 | 83 | 87 | 89 | 91 |
| | High | 83 | 87 | 90 | 90 | 92 | 94 |
| Code 3 Horn | Low | 72 | 76 | 79 | 87 | 89 | 91 |
| | High | 79 | 82 | 86 | 90 | 92 | 94 |

ULC Directional Characteristics: Rated output 92dBA (Unit set on high volume and 24VDC)
-3dBA: 60 degrees left, 40 degrees right -6dBA: 70 degrees left, 70 degrees right

| Description | Volume | Reverberant Per UL 464 | | |
|-----------------|--------|------------------------|---------|---------|
| | | 8.0VDC | 12.0VDC | 17.5VDC |
| Continuous Horn | Low | 72 | 76 | 80 |
| | High | 78 | 83 | 86 |
| Code 3 Horn | Low | 67 | 72 | 74 |
| | High | 75 | 79 | 82 |

1. Strobes will produce 1 flash per second over the "Regulated Voltage" range.
2. Anechoic dBA is measured on axis in a non-reflective (free field) test room using fast meter response. For peak dBA (measured with peak meter response), add 5dBA to anechoic values as shown in Table 2 & 2A. Reverberant dBA is a minimum UL rating based on sound pressure measurements in a reverberant test room.
3. All models are UL Listed for indoor use with a temperature range of +32°F to +120°F (0°C to +49°C) and maximum humidity of 93% ± 2% RH. The effect of shipping and storage temperatures shall not adversely affect the performance of the appliance when it is stored in the original cartons and not subjected to misuse or abuse.

| Table 3: Current Ratings (AMPS) for 24VDC and 12VDC Wall Models | | | | |
|-----------------------------------------------------------------|-------------------|------------|------------------|-------|
| Maximum RMS Current with Hi dBA Setting | | | | |
| Voltage | | NS-241575W | Voltage | |
| DC | 16.0VDC-33.0VDC | 0.104 | 8.0VDC-17.5VDC | 0.220 |
| FWR | 16.0VRMS-33.0VRMS | 0.174 | 8.0VRMS-17.5VRMS | 0.325 |
| Maximum RMS Current with Low dBA Setting | | | | |
| Voltage | | NS-241575W | Voltage | |
| DC | 16.0VDC-33.0VDC | 0.096 | 8.0VDC-17.5VDC | 0.210 |
| FWR | 16.0VRMS-33.0VRMS | 0.160 | 8.0VRMS-17.5VRMS | 0.320 |

When calculating the total current: Use Table 3 to determine the highest value of "RMS Current" for an individual NS then multiply the value by the total number of NS Appliances. Be sure to add the currents for any other appliances powered by the same source and to include any required safety factors.

NOTE: The maximum number of strobes on a single notification appliance circuit shall not exceed 50.

CAUTION: These notification appliances are UL Listed as "Regulated". They are intended to be used with FACP's whose notification circuits are UL Listed as "Regulated." These appliances shall not be used on UL Listed "Special Application" notification circuits unless the appliances are identified to be compatible in the installation instructions of the FACP or unless the FACP is identified to be compatible in this instruction manual.

WARNING: THESE APPLIANCES WERE TESTED TO THE REGULATED VOLTAGE LIMITS OF 16.0-33.0 VOLTS FOR 24V MODELS USING FILTERED DC OR UNFILTERED FULL-WAVE-RECTIFIED VOLTAGE. DO NOT APPLY VOLTAGE OUTSIDE OF THIS RANGE.

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 STROBES. THE MAXIMUM WIRE IMPEDANCE BETWEEN STROBES SHALL NOT EXCEED 35 OHMS.

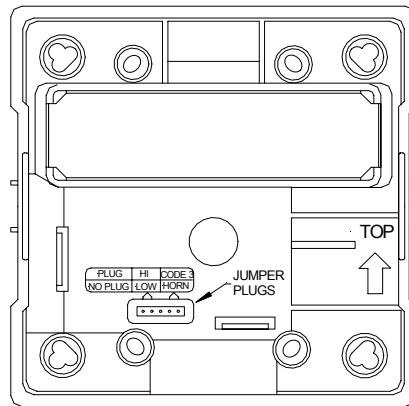
WARNING: MAKE SURE THAT THE TOTAL RMS CURRENT REQUIRED BY ALL APPLIANCES THAT ARE CONNECTED TO THE SYSTEM'S PRIMARY AND SECONDARY POWER SOURCES, APPLIANCE CIRCUITS, SM, DSM SYNC MODULES AND WHELOCK POWER SUPPLIES DOES NOT EXCEED THE POWER SOURCES' RATED CAPACITY OR THE CURRENT RATINGS OF ANY FUSES ON 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.

CAUTION: These horn/strobes are not designed to be used on coded systems in which the applied voltage is cycled on and off.

SOUND OUTPUT (SPL) SETTINGS:

WARNING: THE NS APPLIANCES MUST BE FIELD SET TO THE DESIRED TONE AND dBA SOUND OUTPUT LEVEL BEFORE THEY ARE INSTALLED. THIS IS DONE BY PROPERLY INSERTING JUMPER PLUGS 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.

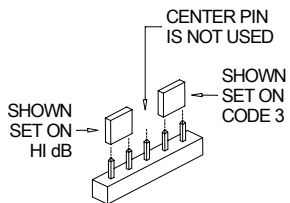
Figure 1: Showing Location of Jumper Plug



Factory setting is on High dB and Code 3.

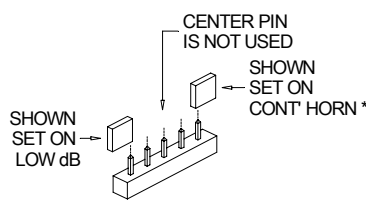
NOTE: The NS-24MCW must be set for Code 3 horn when installed on a synchronized notification appliance circuit (NAC).

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



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

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



No jumper plugs are needed for Continuous Horn and low dB settings.

Figure 4: Jumper plug settings for High dB and Continuous Horn.

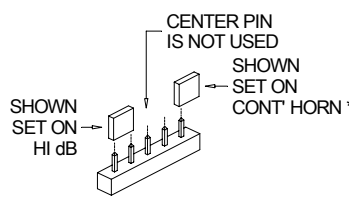
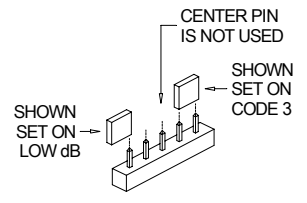


Figure 5: Jumper plug settings for Low dB and Code 3.



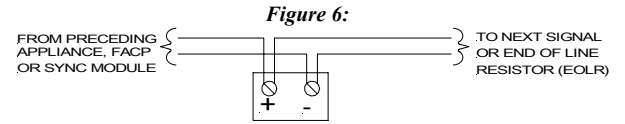
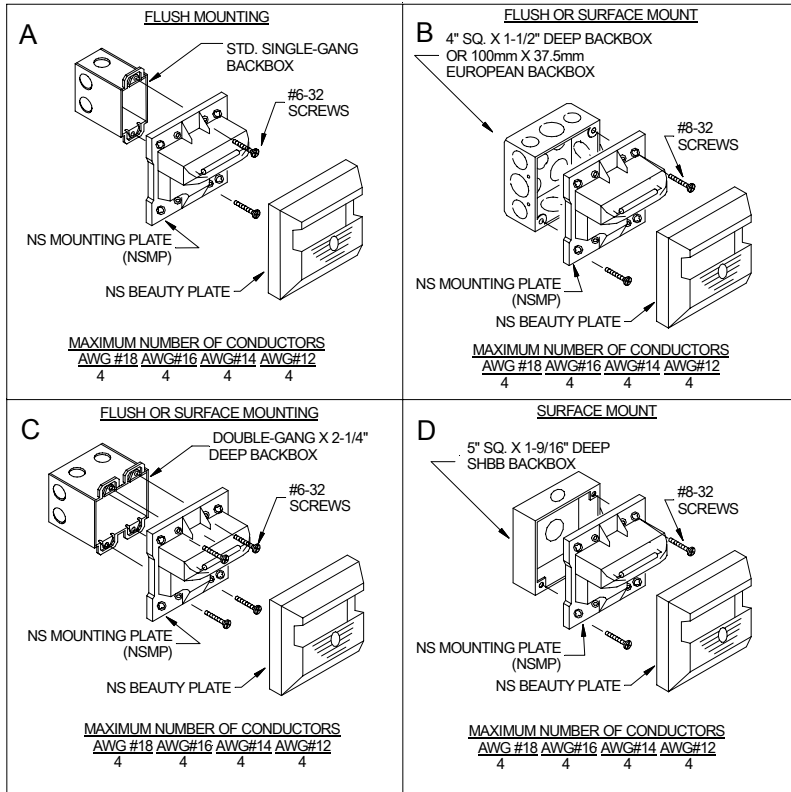
However, it is recommended that the jumper plug be retained in the unit for future use (if needed) as shown.

WIRING AND MOUNTING INFORMATION:

CAUTION: The following figures (A-D) 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.

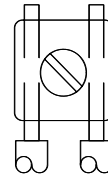
CAUTION: Check that the installed product will have sufficient clearance and wiring room prior to installing backboxes and conduit, especially if sheathed multiconductor cable or 3/4" conduit fittings are used.

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.



When the sync module is used, the audible tone will be the **code 3 sound only**. Refer to installation instruction sheets for SM (P83123), DSM (P83177) or Wheelock power supplies for additional information.

Figure 7:



- The NS has 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.
- 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.

1. This NS model can be flush mounted to a standard single-gang backbox (Figure A), 4" or 100mm backbox (Figure B) or double-gang backbox (Figure C). It can also be surface mounted to a 4" or 100mm backbox (Figure B), double-gang backbox (Figure C) or the SHBB (Figure D). Mounting hardware for each mounting option is supplied.
2. Conduit entrances to the backbox should be provided to provide sufficient wiring clearance for the installed product. 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.
3. When terminating field wires, do not use more lead length than required. Excess lead length could result in insufficient wiring space for the appliance.
4. 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.
5. This NS model has an integrated strobe mounting plate (SMP) which must be oriented correctly when it is mounted to the backbox. Turn the SMP so that the arrow above the words "Horizontal Strobe" points to the top side.
6. Move the selector switch to the desired candela setting. The setting is indicated by a pointer and can be seen on the bottom side of the lens. See Figure 1.
7. Mount the SMP first to the backbox. Next slide the beauty plate over the SMP until the 2 snaps of the beauty plate engage with the SMP.
8. The beauty plate can be removed from the strobe assembly once engaged. First, gently insert a screwdriver into one of the slots located on the top and bottom edges of the 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 SMP.

WARNING: WHEN INSTALLING STROBES IN AN OPEN OFFICE OR OTHER AREAS CONTAINING PARTITIONS OR OTHER VIEWING OBSTRUCTIONS, SPECIAL ATTENTION SHOULD BE GIVEN TO THE LOCATION OF THE STROBES SO THAT THEIR OPERATING EFFECT CAN BE SEEN BY ALL INTENDED VIEWERS, WITH THE INTENSITY, NUMBER, AND TYPE OF STROBES BEING SUFFICIENT TO MAKE SURE THAT THE INTENDED VIEWER IS ALERTED BY PROPER ILLUMINATION, REGARDLESS OF THE VIEWER'S ORIENTATION. FAILURE TO DO SO COULD RESULT IN PROPERTY DAMAGE AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.

WARNING: THE NS HORN STROBE IS A "FIRE ALARM DEVICE - DO NOT PAINT."

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.

⚠ WARNING: A SMALL POSSIBILITY EXISTS THAT THE USE OF MULTIPLE STROBES WITHIN A PERSON'S FIELD OF VIEW, UNDER CERTAIN CIRCUMSTANCES, MIGHT INDUCE A PHOTO-SENSITIVE RESPONSE IN PERSONS WITH EPILEPSY. STROBE REFLECTIONS IN A GLASS OR MIRRORED SURFACE MIGHT ALSO INDUCE SUCH A RESPONSE. TO MINIMIZE THIS POSSIBLE HAZARD, WHEELOCK STRONGLY RECOMMENDS THAT THE STROBES INSTALLED SHOULD NOT PRESENT A COMPOSITE FLASH RATE IN THE FIELD OF VIEW WHICH EXCEEDS FIVE (5) Hz AT THE OPERATING VOLTAGE OF THE STROBES. WHEELOCK ALSO STRONGLY RECOMMENDS THAT THE INTENSITY AND COMPOSITE FLASH RATE OF INSTALLED STROBES COMPLY WITH LEVELS ESTABLISHED BY APPLICABLE LAWS, STANDARDS, REGULATIONS, CODES AND GUIDELINES.

NOTE: NFPA 72/ANSI 117.1 conform to ADAAG Equivalent Facilitation Guidelines in using fewer, higher intensity strobes within the same protected area.

⚠ 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).

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.

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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.

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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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