

Thank you for using our products.

**INSTALLATION INSTRUCTIONS
SERIES NS4 FOUR 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 NS4 Horn Strobe Appliances are designed to provide independent operation for the horn appliance, when the strobe circuit is powered. They are the ideal choice for retrofit applications as well as new installations. The NS4 Appliances are UL Listed under Standard 1971 for Signaling Devices for the Hearing Impaired and UL Standard 464 for Audible Signal Appliances. 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 Mounting Plate (NSMP) that can be mounted to single-gang, double-gang, 4" backbox, 100mm European backbox or SHBB surface backbox (See Mounting Options). These appliances are Listed for ***wall mounting only***. The NS4 Appliances use a Xenon flashtube with solid state circuitry enclosed in a rugged Lexan® lens to provide maximum visibility and reliability for effective visible signaling.

The horn portion of the NS4 Appliances can be field set to provide either Continuous Horn or Code 3 Horn. The sound output can be field set for High (HI) or Low (LO) dBA.

The NS4 Horn Strobe can also be used with a Sync Module (SM) or Dual Sync Module (DSM) to provide synchronized strobe and synchronized Code 3 signal.

These strobe 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

 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:

<i>Table 1: UL Ratings</i>			
Models	Nominal Voltage (VDC/VRMS)	Rated Voltage Range (VDC/VRMS)	Strobe Candela (cd)
NS4-2415W	24	20.0-31.0	15
NS4-241575W*	24	20.0-31.0	15
NS4-2430W	24	20.0-31.0	30
NS4-2475W	24	20.0-31.0	75
NS4-24110W	24	20.0-31.0	110
NS4-1215W	12	10.5-15.6	15
NS4-121575W*	12	10.5-15.6	15

* 1575W models are UL Listed for 15cd and meet 75cd on axis.

Table 2: dBA Sound Output for 24VDC							
Description	Volume	Reverberant Per UL 464			Anechoic dBA		
		20VDC	24VDC	31VDC	20VDC	24VDC	31VDC
Continuous Horn	Low	79	82	82	88	90	92
	High	85	88	88	93	95	97
Code 3 Horn	Low	75	75	75	88	90	92
	High	79	82	82	93	95	97

Table 2A: dBA Sound Output for 12VDC							
Description	Volume	Reverberant Per UL 464			Anechoic dBA		
		10.5VDC	12VDC	15.6VDC	10.5VDC	12VDC	15.6VDC
Continuous Horn	Low	73*	76	76	82	84	86
	High	82	82	85	87	89	91
Code 3 Horn	Low	67*	70*	70*	82	84	86
	High	76	76	79	87	89	91

⚠ WARNING: NS4 AUDIBLE APPLIANCES SET ON LOW dBA DO NOT MEET THE 75dBA MINIMUM UL REVERBERANT SOUND LEVEL REQUIRED FOR PUBLIC MODE FIRE PROTECTION SERVICE (NOTED BY * IN TABLE 1). THIS SETTING IS ACCEPTABLE ONLY FOR GENERAL SIGNALING (NON-FIRE ALARM) USE. USE THE “HIGH” dBA SETTING WITH THIS TONE FOR PUBLIC MODE SERVICE.

NOTES:

1. Strobes will produce 1 flash per second over the listed 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. 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 85% RH.

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.

⚠ WARNING: ALTHOUGH UL TESTING HAS VERIFIED THAT THESE PRODUCTS FUNCTION EVEN AT 80% OF THEIR MINIMUM RATING AND 110% OF THEIR MAXIMUM RATING, WHELOCK STRONGLY RECOMMENDS THAT THE VOLTAGE APPLIED TO THESE PRODUCTS BE WITHIN THEIR RATED VOLTAGE RANGE. THE APPLICATION OF IMPROPER VOLTAGE MAY RESULT IN DEGRADED OPERATION OR DAMAGE TO THESE PRODUCTS, WHICH COULD RESULT IN PROPERTY DAMAGE AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.

Table 3: Strobe Current Ratings (AMPS)					
Rated Average Current					
Voltage	NS4-2415W	NS4-241575W	NS4-2430W	NS4-2475W	NS4-24110W
20.0VDC	0.067	0.084	0.100	0.165	0.209
24.0VDC	0.057	0.072	0.085	0.140	0.169
31.0VDC	0.049	0.059	0.069	0.114	0.138
20.0VRMS	0.087	0.109	0.131	0.217	0.274
24.0VRMS	0.080	0.101	0.121	0.200	0.241
31.0VRMS	0.073	0.088	0.105	0.176	0.217
Voltage	NS4-1215W	NS4-121575W	-----	-----	-----
10.5VDC	0.156	0.199	-----	-----	-----
12.0VDC	0.133	0.170	-----	-----	-----
15.6VDC	0.107	0.137	-----	-----	-----
10.5VRMS	0.202	0.258	-----	-----	-----
12.0 VRMS	0.187	0.238	-----	-----	-----
15.6 VRMS	0.162	0.206	-----	-----	-----
Rated Peak Current *					
Voltage	NS4-2415W	NS4-241575W	NS4-2430W	NS4-2475W	NS4-24110W
20.0VDC	0.169	0.205	0.240	0.400	0.495
24.0VDC	0.173	0.210	0.250	0.400	0.510
31.0VDC	0.178	0.215	0.255	0.425	0.525
20.0VRMS	0.173	0.210	0.250	0.410	0.510
24.0VRMS	0.178	0.215	0.255	0.410	0.525
31.0VRMS	0.182	0.220	0.265	0.435	0.535
Voltage	NS4-1215W	NS4-121575W	-----	-----	-----
10.5VDC	0.405	0.510	-----	-----	-----
12.0VDC	0.410	0.520	-----	-----	-----
15.6VDC	0.415	0.530	-----	-----	-----
10.5VRMS	0.410	0.520	-----	-----	-----
12.0 VRMS	0.415	0.530	-----	-----	-----
15.6 VRMS	0.420	0.540	-----	-----	-----
Rated Inrush Current **					
Voltage	NS4-2415W	NS4-241575W	NS4-2430W	NS4-2475W	NS4-24110W
20.0VDC	0.135	0.135	0.135	0.135	0.135
24.0VDC	0.165	0.165	0.165	0.165	0.165
31.0VDC	0.210	0.210	0.210	0.210	0.210
20.0VRMS	0.175	0.175	0.175	0.175	0.175
24.0VRMS	0.210	0.210	0.210	0.210	0.210
31.0VRMS	0.275	0.275	0.275	0.275	0.275
Voltage	NS4-1215W	NS4-121575W	-----	-----	-----
10.5VDC	0.225	0.225	-----	-----	-----
12.0VDC	0.255	0.255	-----	-----	-----
15.6VDC	0.340	0.340	-----	-----	-----
10.5VRMS	0.320	0.320	-----	-----	-----
12.0 VRMS	0.370	0.370	-----	-----	-----
15.6 VRMS	0.485	0.485	-----	-----	-----

* The time duration for the peak current is 100 microseconds.

** The time duration for the inrush current is 4 milliseconds.

Table 3A: Horn Current Ratings (AMPS) for Wall Models					
High dBA					
Voltage	NS4-2415W	NS4-241575W	NS4-2430W	NS4-2475W	NS4-24110W
20.0VDC	0.024	0.024	0.024	0.024	0.024
24.0VDC	0.028	0.028	0.028	0.028	0.028
31.0VDC	0.036	0.036	0.036	0.036	0.036
20.0VRMS	0.034	0.034	0.034	0.034	0.034
24.0VRMS	0.044	0.044	0.044	0.044	0.044
31.0VRMS	0.057	0.057	0.057	0.057	0.057
Voltage	NS4-1215W	NS4-121575W	-----	-----	-----
10.5VDC	0.014	0.014	-----	-----	-----
12.0VDC	0.015	0.015	-----	-----	-----
15.6VDC	0.021	0.021	-----	-----	-----
10.5VRMS	0.021	0.021	-----	-----	-----
12.0 VRMS	0.025	0.025	-----	-----	-----
15.6 VRMS	0.030	0.030	-----	-----	-----
Low dBA					
Voltage	NS4-2415W	NS4-241575W	NS4-2430W	NS4-2475W	NS4-24110W
20.0VDC	0.017	0.017	0.017	0.017	0.017
24.0VDC	0.022	0.022	0.022	0.022	0.022
31.0VDC	0.027	0.027	0.027	0.027	0.027
20.0VRMS	0.022	0.022	0.022	0.022	0.022
24.0VRMS	0.033	0.033	0.033	0.033	0.033
31.0VRMS	0.043	0.043	0.043	0.043	0.043
Voltage	NS4-1215W	NS4-121575W	-----	-----	-----
10.5VDC	0.008	0.008	-----	-----	-----
12.0VDC	0.009	0.009	-----	-----	-----
15.6VDC	0.011	0.011	-----	-----	-----
10.5VRMS	0.010	0.010	-----	-----	-----
12.0 VRMS	0.011	0.011	-----	-----	-----
15.6 VRMS	0.015	0.015	-----	-----	-----

⚠ WARNING: MAKE SURE THAT THE TOTAL AVERAGE CURRENT, TOTAL PEAK CURRENT AND TOTAL INRUSH CURRENT REQUIRED BY ALL APPLIANCES THAT ARE CONNECTED TO THE SYSTEM'S PRIMARY AND SECONDARY POWER SOURCES, SIGNALING CIRCUITS, SM AND DSM SYNC MODULES 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 average, peak and inrush currents: Use Table 3 and 3A to determine the highest value of "Rated Average Current" for an individual strobe (across the expected operating voltage range of the strobe), and use Table 3 to determine the highest value of "Rated Inrush Current" or "Rated Peak Current" (whichever is higher) of an individual strobe (across the expected voltage range of the strobe), then multiply these values by the total number of strobes; be sure to add the currents for any other appliances, including audible signaling appliances, powered by the same source and include any required safety factors.

If the inrush current or peak current exceeds the power supplies' inrush capacity, the output voltage provided by the power supplies may drop below the listed voltage range of the appliances connected to the supply and the voltage may not recover in some types of power supplies. For example, an auxiliary power supply that lacks filtering at its output stage (either via lack of capacitance and/or lack of battery backup across the output) may exhibit this characteristic.

⚠ CAUTION: Series NS4 are not designed to be used on coded systems in which the applied voltage is cycled on and off.

LIGHT DISTRIBUTION PER UL 1971:

Horizontal Angle (in deg.)	15cd		1575cd*	30cd		75cd		110cd	
	UL Min.	Typ. 15cd	Typ. 1575cd	UL Min.	Typ. 30cd	UL Min.	Typ. 75cd	UL Min.	Typ. 110cd
0	15.0	24	94	30.0	46	75.0	103	110.0	149
5	13.5	24	93	27.0	46	67.5	103	99.0	152
10	13.5	24	88	27.0	45	67.5	104	99.0	151
15	13.5	24	87	27.0	46	67.5	100	99.0	151
20	13.5	23	85	27.0	43	67.5	101	99.0	148
25	13.5	23	80	27.0	43	67.5	98	99.0	140
30	11.3	21	75	22.5	41	56.3	94	82.5	135
35	11.3	20	71	22.5	40	56.3	89	82.5	129
40	11.3	14	62	22.5	39	56.3	83	82.5	124
45	11.3	18	52	22.5	41	56.3	81	82.5	133
50	8.3	18	35	16.5	36	41.3	77	60.5	121
55	6.8	12	32	13.5	27	33.8	60	49.5	85
60	6.0	11	34	12.0	30	30.0	59	44.0	95
65	5.3	13	27	10.5	35	26.3	71	38.5	113
70	5.3	17	19	10.5	29	26.3	73	38.5	81
75	4.5	13	11	9.0	22	22.5	53	33.0	72
80	4.5	8	9	9.0	17	22.5	35	33.0	50
85	3.8	7	10	7.5	15	18.8	30	27.5	38
90	3.8	6	10	7.5	15	18.8	30	27.5	43

Vertical Angle (in deg.)	15cd		1575cd*	30cd		75cd		110cd	
	UL Min.	Typ. 15cd	Typ. 1575cd	UL Min.	Typ. 30cd	UL Min.	Typ. 75cd	UL Min.	Typ. 110cd
0	15.0	24	94	30.0	46	75.0	103	110.0	149
5	13.5	24	83	27.0	46	67.5	103	99.0	149
10	13.5	24	30	27.0	46	67.5	103	99.0	137
15	13.5	24	19	27.0	45	67.5	102	99.0	120
20	13.5	24	17	27.0	41	67.5	104	99.0	110
25	13.5	21	16	27.0	48	67.5	89	99.0	129
30	13.5	23	15	27.0	40	67.5	96	99.0	114
35	9.8	22	12	19.5	45	48.8	91	71.5	119
40	6.9	13	11	13.8	39	34.3	57	50.6	109
45	5.1	9	10	10.2	24	25.5	36	37.4	66
50	4.0	9	9	8.1	16	20.0	33	29.7	45
55	3.3	8	9	6.6	15	16.3	31	24.2	43
60	2.7	8	9	5.4	15	13.5	31	19.8	40
65	2.4	8	9	4.8	14	12.0	31	17.6	40
70	2.3	8	10	4.5	15	11.3	31	16.5	39
75	2.0	8	10	4.0	14	10.0	31	14.3	39
80	1.8	8	9	3.6	13	9.0	27	13.2	36
85	1.8	7	9	3.6	13	9.0	27	13.2	37
90	1.8	3	9	3.6	9	9.0	12	13.2	28

* 1575W models are UL Listed for 15cd and meet 75cd on axis.

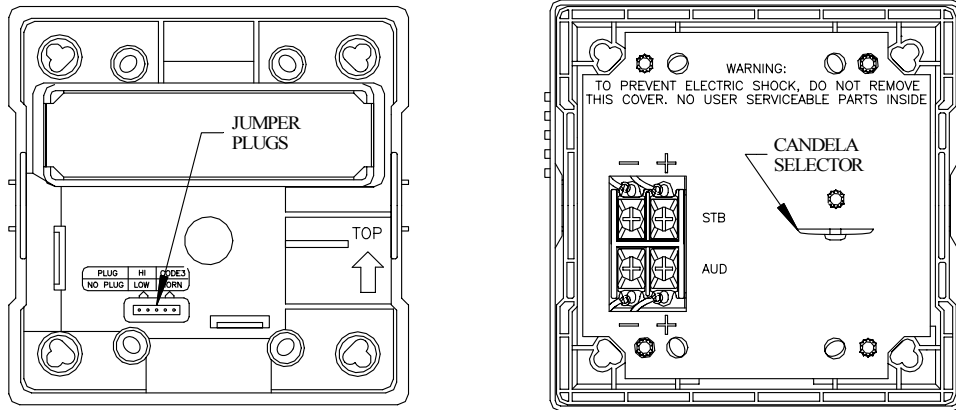
⚠ WARNING: WHEN INSTALLING STROBES IN AN OPEN OFFICE OR OTHER AREAS CONTAINING PARTITIONS OR OTHER VIEWING OBSTRUCTIONS, SPECIAL ATTENTION SHOULD BE GIVEN TO THE LOCATION OF THE STROBES SO THAT THEIR OPERATING EFFECT CAN BE SEEN BY ALL INTENDED VIEWERS, WITH THE INTENSITY, NUMBER, AND TYPE OF STROBES 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 NS4 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.

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 off, 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



Factory setting is on High dB and Code 3

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

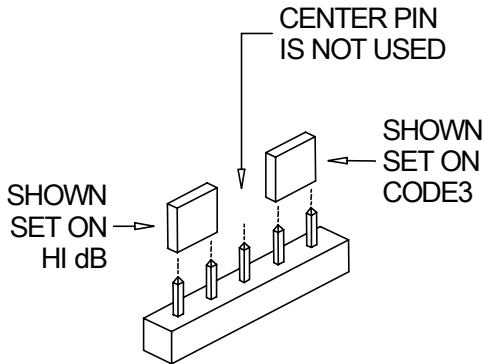


Figure 3: Jumper plug settings for Low dB and Continuous Horn.

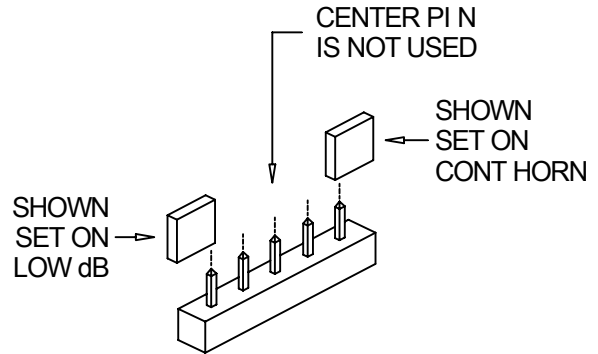


Figure 4: Jumper plug settings for Low dB and Code 3.

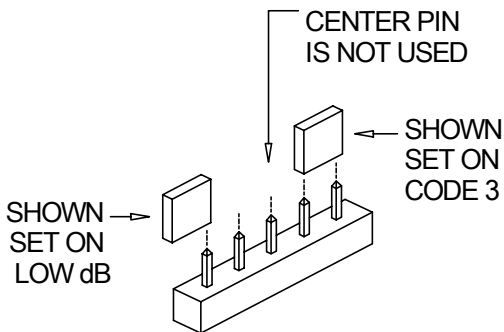
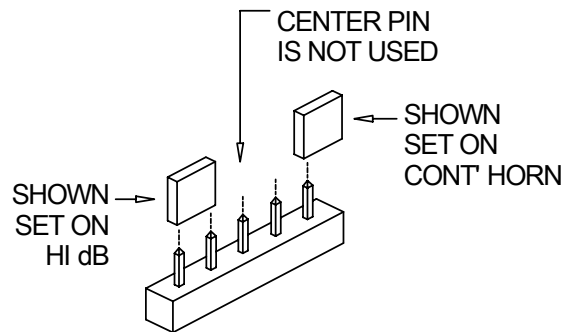


Figure 5: Jumper plug settings for High dB and Continuous Horn.



(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 NS4 must be set for Code 3 horn when used with the sync module.

WIRING INFORMATION:

Figure 6: Audible signal and strobe operate independently.

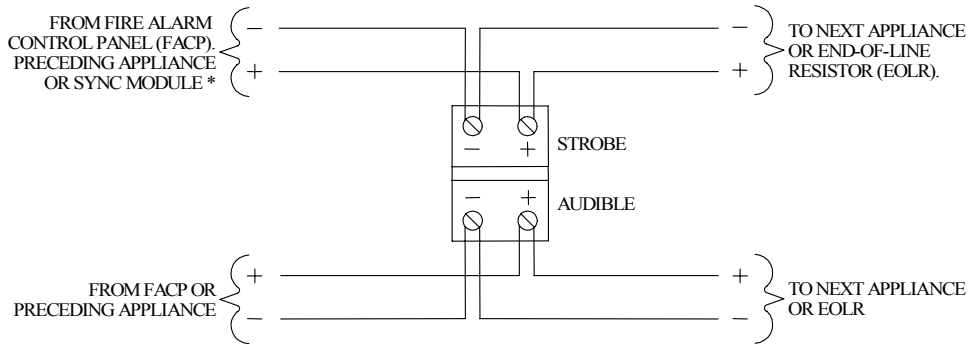
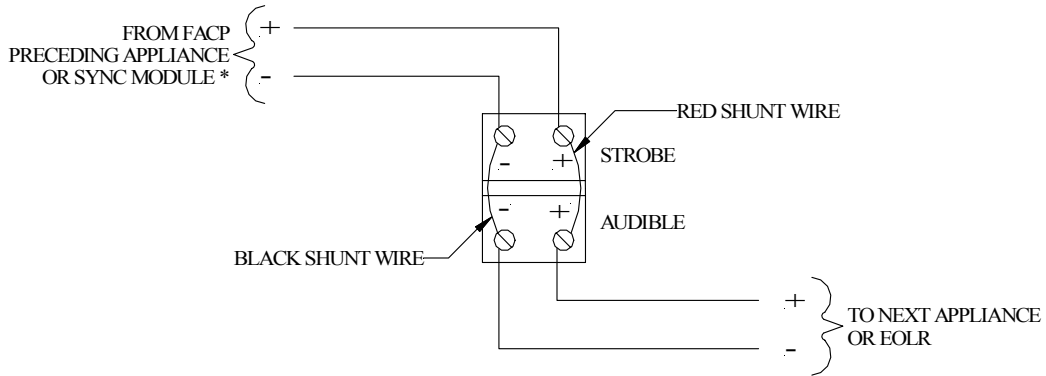
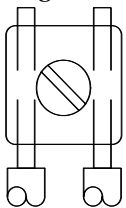


Figure 6A: Audible signal and strobe operate in unison . Red and black shunt wires are supplied.



* When the sync module is used, the audible tone will be Code 3 sound only. Refer to Sync Module Installation Instruction sheets SM (P83123) and DSM (P83177) for additional information. Audible will operate only with power applied to both strobe and audible.

Figure 7.

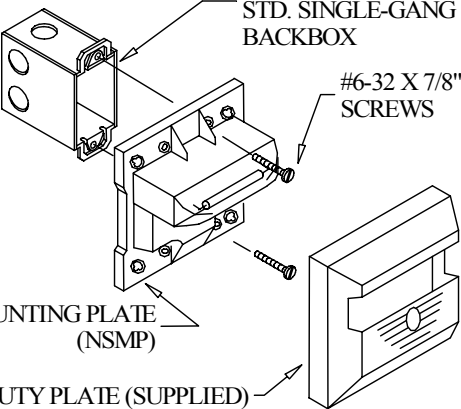
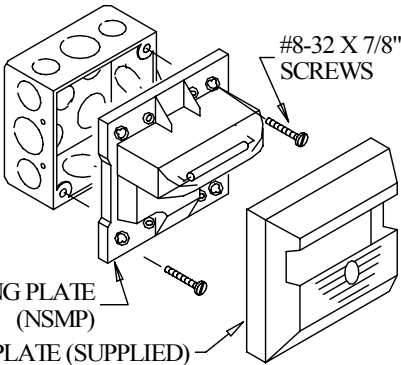
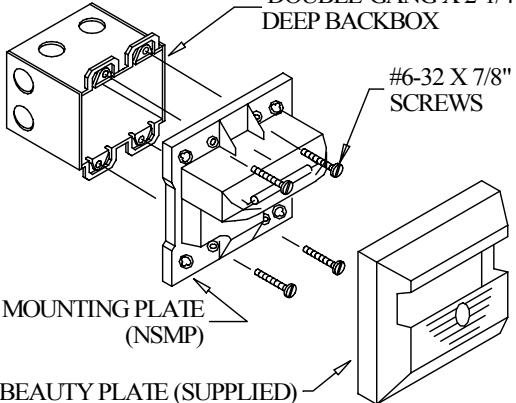
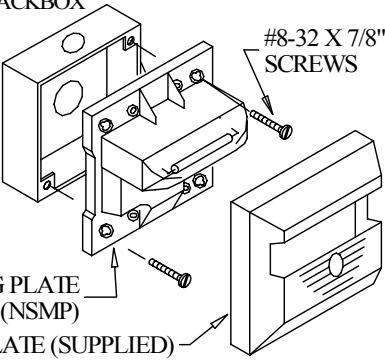


- 1) NS4 Appliances have in-out wiring terminals that accepts two #12 to 18 American Wire Gauge (AWG) wires at each screw terminal. Strip leads 3/8" inches for connection to screw terminals.
- 2) Break all in-out wire runs on supervised circuit supervision as shown in Figure 7. The polarity shown in 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.

<p>A</p> <p><u>FLUSH MOUNTING</u></p>  <p>STD. SINGLE-GANG BACKBOX</p> <p>#6-32 X 7/8" SCREWS</p> <p>NS MOUNTING PLATE (NSMP)</p> <p>NS BEAUTY PLATE (SUPPLIED)</p> <p><u>MAXIMUM NUMBER OF CONDUCTORS</u> BACKBOX</p> <table border="1"> <thead> <tr> <th>DEPTH</th> <th>AWG #18</th> <th>AWG #16</th> <th>AWG #14</th> <th>AWG #12</th> </tr> </thead> <tbody> <tr> <td>2-1/2"</td> <td>8</td> <td>4</td> <td>4</td> <td>4</td> </tr> <tr> <td>3-1/8"</td> <td>8</td> <td>8</td> <td>8</td> <td>8</td> </tr> </tbody> </table>	DEPTH	AWG #18	AWG #16	AWG #14	AWG #12	2-1/2"	8	4	4	4	3-1/8"	8	8	8	8	<p>B</p> <p><u>FLUSH OR SURFACE MOUNT</u></p>  <p>4" SQ. X 1-1/2" DEEP BACKBOX OR 100mm X 37.5mm EUROPEAN BACKBOX</p> <p>#8-32 X 7/8" SCREWS</p> <p>NS MOUNTING PLATE (NSMP)</p> <p>NS BEAUTY PLATE (SUPPLIED)</p> <p><u>MAXIMUM NUMBER OF CONDUCTORS</u></p> <table border="1"> <thead> <tr> <th>AWG #18</th> <th>AWG #16</th> <th>AWG #14</th> <th>AWG #12</th> </tr> </thead> <tbody> <tr> <td>8</td> <td>8</td> <td>8</td> <td>8</td> </tr> </tbody> </table>	AWG #18	AWG #16	AWG #14	AWG #12	8	8	8	8
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<p>C</p> <p><u>FLUSH OR SURFACE MOUNTING</u></p>  <p>DOUBLE-GANG X 2-1/4" DEEP BACKBOX</p> <p>#6-32 X 7/8" SCREWS</p> <p>NS MOUNTING PLATE (NSMP)</p> <p>NS BEAUTY PLATE (SUPPLIED)</p> <p><u>MAXIMUM NUMBER OF CONDUCTORS</u></p> <table border="1"> <thead> <tr> <th>AWG #18</th> <th>AWG #16</th> <th>AWG #14</th> <th>AWG #12</th> </tr> </thead> <tbody> <tr> <td>8</td> <td>8</td> <td>8</td> <td>8</td> </tr> </tbody> </table>	AWG #18	AWG #16	AWG #14	AWG #12	8	8	8	8	<p>D</p> <p><u>SURFACE MOUNT</u></p>  <p>5" SQ. X 1-9/16" DEEP SHBB BACKBOX</p> <p>#8-32 X 7/8" SCREWS</p> <p>NS MOUNTING PLATE (NSMP)</p> <p>NS BEAUTY PLATE (SUPPLIED)</p> <p><u>MAXIMUM NUMBER OF CONDUCTORS</u></p> <table border="1"> <thead> <tr> <th>AWG #18</th> <th>AWG #16</th> <th>AWG #14</th> <th>AWG #12</th> </tr> </thead> <tbody> <tr> <td>8</td> <td>8</td> <td>8</td> <td>8</td> </tr> </tbody> </table>	AWG #18	AWG #16	AWG #14	AWG #12	8	8	8	8							
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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. NS4 models have an integrated NS Mounting Plate (NSMP).
2. The NS Mounting Plate (NSMP) must be oriented correctly when it is mounted to the backbox. Turn the NSMP so that the arrow below the word "Top" points to the top side of the NSMP.
- 3 . NS4 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). NS4 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 NSMP first to the backbox. Next slide the Beauty Plate over the NSMP until the 2 side snaps of the NS Beauty Plate engage with the NSMP.
5. The NS Beauty Plate can be removed from the strobe assembly once engaged. First, gently insert a screwdriver into one of the slots located on the side edges of the NS 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 NSMP.
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 appliances) through the backbox. Such additional wires could result in insufficient wiring space for the signaling appliance.

⚠ 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.

NS4-24110W strobe models are Listed for use in sleeping or non-sleeping areas when installed in accordance with appropriate NFPA Standards and the Authority Having Jurisdiction.

⚠ WARNING: **INSTALLATION OF WHEELOCK 110 CANDELA STROBE PRODUCTS IN SLEEPING AREAS SHOULD BE WALL MOUNTED AT LEAST 24" BELOW THE CEILING AS FOLLOWS: (1) THE ON AXIS (DIRECTLY IN FRONT OF LENS) LIGHT OUTPUT SHOULD BE DIRECTED AT THE EYE-LIDS OF THE SLEEPING PERSON, E.G. PILLOW END OF BED, BED HEAD; (2) NO PART OF THE BED SHALL BE MORE THAN SIXTEEN (16) FEET FROM THE STROBE NOTIFICATION APPLIANCE. INSTALLERS MUST ADVISE OWNERS AND OPERATORS OF BUILDINGS WITH SLEEPING OCCUPANTS, E.G. HOTELS AND MOTELS, TO WARN GUESTS, RESIDENTS AND EMPLOYEES TO NOT MOVE THE BED LOCATION TO A POSITION VIOLATING POINTS (1) AND (2) ABOVE OR SERIOUS INJURY AND/OR LOSS OF LIFE MAY OCCUR DURING A FIRE EMERGENCY.**

⚠ 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 electrical noise immunity (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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