

# Wheelock AS Series Audible Strobe Devices & AH Series Audible Devices



AS Audible  
Strobe



AH Audible

## Description

Wheelock's patented 2-wire AS Series Audible Strobe Appliances and AH Series Audible Devices offer more features with low current draw.

Strobe options for wall mount models include 15/75cd or Wheelock's patented MCW multi-candela wall strobes with field selectable candela settings of 15/30/75/110cd.

Ceiling mount models incorporate Wheelock's patented MCC multi-candela ceiling strobe with field selectable intensities of 15/30/75/95cd.

The audible provides a selectable choice of either a continuous horn or temporal pattern (Code 3) when constant voltage from a Fire Alarm Panel (FACP) is applied. Each tone has 3 dBA settings to choose from.

When used with the Wheelock Series SM or DSM Sync Module or with a power supply with the Wheelock sync protocol, synchronization of the continuous horn tone provides the temporal (code 3) tone (mandated by NFPA 72) simultaneously for all audible appliances. This ensures a distinct temporal (code 3) pattern when 2 or more audibles are within hearing distance. If not synchronized the temporal sound could overlap and not be distinctive. At the same time the strobes will be synchronized.

This provides the ability to comply with ADA guidelines concerning photosensitive epilepsy and the NFPA standards when installing 2 or more visual appliances within the field of view all of this plus the ability to silence the audible is achieved using only 2 wire.

## General Notes

- Strobes are designed to flash once per second minimum over the Regulated Voltage Range. Note that NFPA-72 (1999) specifies a flash rate of 1 to 2 flashes per second and ADA Guidelines specify a flash rate of 1 to 3 flashes per second.
- All candela ratings represent minimum effective Strobe intensity based on UL Standard 1971.
- AS Series Strobe products are listed under UL Standard 1971 for indoor use with a temperature range of 32° F to 120° F (0° C to 49° C) and maximum humidity of 93% (+ 2%)
- AH-24 Series horns are listed under UL Standard 464 for audible signal appliances (indoor use only).
- AH-24WP Series audible appliances are listed under UL Standard 464 for indoor/outdoor use with a temperature range of -31° F to 150° F (-35° C to 66° C) and maximum humidity of 95%.
- "Regulated Voltage Range" is the newest terminology used by UL to identify the voltage range. Prior this change, UL used the terminology "Listed Voltage Range".

## Features

- ADA/NFPA/UFC/ANSI Compliant
- **AS Series Audible Strobe Devices are available in wall and ceiling-mount models:**
  - **Wall mount models offered** are available with Field Selectable Candela Settings of 15/30/75/110cd or 15/75cd (single candela model)
  - **Ceiling mount models offered** are available with field selectable candela settings of 15/30/75/95cd
- Selectable Continuous Horn or Temporal (Code 3)
- 3 Selectable dBA settings (99, 95 and 90 dBA) in both tones
- **Patented 2-Wire Audible Strobe Appliance**
- Patented Universal Mounting Plate
- Weatherproof models are available for outdoor use
- Strobes produce 1 flash per second over the regulated voltage range
- 12 and 24 VDC models with wide UL "Regulated Voltage Range" using filtered DC or unfiltered FWR input voltage
- Synchronize with Wheelock SM, DSM or power supply with built-in Wheelock sync protocol
- Fast installation with IN/OUT screw terminals using #12 and #18 AWG wires

## Listings

Listings and approvals below apply to the basic Wheelock AS Series Audible Strobe Devices and AH Series Audible Devices. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- UL Listed: file E5946.
- ULC Listed: file CS356.
- MEA approved: file 152-92-E.
- CSFM approved: file 7125-0785:131

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# Engineer's Specifications

- The notification appliances shall be Wheelock's patented AS Series Audible Strobe and AH Series Audible Horn devices, and when synchronization is required, companion SM and DSM Sync Modules, or approved equivalents. AS Series devices and SM and DSM Sync Modules shall be listed under UL Standard 1971 (Emergency Devices for the Hearing Impaired for Indoor Fire Protection Service). AH Series Audible Horn shall be listed under Standard 464 (Fire Protective Signaling). AS, AH, SM, and DSM devices shall be certified to meet FCC Part 15, Class B.
- The devices shall be designed for two-wire operation and shall provide either a continuous or temporal (Code 3) tone when constant voltage from a Notification Appliance Circuit (NACs) of the Fire Alarm Control Panel (FACP) is applied; or synchronized temporal (Code 3) horn and synchronized strobe when used in conjunction with the SM or DSM Sync Modules.
- The AS Series shall be designed so that the audible signal may be silenced while maintaining strobe activation (when used with the SM or DSM Sync Modules). The SM and DSM Sync Modules shall incorporate two inputs from Notification Appliance Circuits (NACs) for power connection from the Fire Alarm Control Panel (FACP): one for the strobe circuit (NAC), and one for the audible circuit (NAC). A single two-wire output shall control both the audible and visual appliances. Upon activation of the audible silence function of the FACP, the audible signal shall be silenced while maintaining strobe activation.
- Sound output at 10 feet (3.048 m) shall be field-selectable for 90, 95, or 99 dBA anechoic for both continuous or temporal (Code 3) tone. The AS Series shall provide listed strobe intensities of 15, 15/75, 30, 75, and 110 candela for wall-mount and/or 75 or 100 candela for ceiling-mount applications; with a flash rate of one flash per second minimum across the listed voltage range. The strobe shall incorporate a Xenon® flashtube enclosed in a rugged LEXAN® lens. The maximum allowable current at 24 VDC shall be 87 mA @ 15 cd, 102 mA @ 15/75 cd, 120 mA @ 30 cd, 177 mA @ 75 cd, and 202 mA @ 110 cd. All devices shall incorporate a reduced inrush circuit design. The strobe shall have a horizontal plane.
- The Sync Module shall be designed and available in two versions: the **SM-12/24**, for control of a single Class "B" NAC circuit; and a dual-output version, the **DSM-12/24**, for control of either a single Class "A" or two Class "B" NAC circuits. The DSM dual-circuit version shall provide the additional capability of "daisy-chaining," i.e., the ability to interconnect multiple DSM's for synchronous horn and strobe operation on multiple NAC circuits. DSM-12/24 interconnection capability shall be for a maximum of 20 modules (40 Class "B" NAC circuits or 20 Class "A" NAC circuits). Rated average current requirement for the SM-12/24 shall be 0.014 amperes @ 12 VDC and 0.025 amperes @ 24 VDC; the DSM-12/24 shall be 0.020 amperes @ 12 VDC and 0.038 amperes @ 24 VDC. The SM Sync Module shall be capable of handling a three-ampere load at 12 or 24 VDC. The DSM Sync Modules shall be capable of handling a load of three amperes **per circuit** in the Class "B" mode, and three amperes **per module** in the Class "A" mode at 12 or 24 VDC.
- SM or DSM Sync Modules and AS Audible Strobes shall be designed as a **system** for continuous activation of the strobes should the Sync Module contacts fail in the passive state (i.e., contacts remain closed). In this default mode, the strobes shall revert to a non-synchronized default flash rate.
- AS/AH Series devices shall be designed for operation at 12 or 24 VDC, over their respective listed voltage ranges of 10.5 to 15.6 VDC; and 20.0 to 31.0 VDC. The units shall be designed for operation on filtered DC, or unfiltered  $V_{RMS}$ . Rated average current for AS Series devices shall depend upon voltage and strobe intensity; current shall be as low as 0.058 amperes for 24 VDC versions and 0.145 amperes for 12 VDC versions. Rated average current for AH Series devices (volume set at high-dB output) shall be 0.041 amperes for 24 VDC versions and 0.113 amperes for 12 VDC versions.
- All versions shall be polarized for DC supervision and shall incorporate screw terminals for in/out field wiring of size #18 AWG (0.75 mm<sup>2</sup>) to #12 AWG (3.25 mm<sup>2</sup>).
- AS/AH shall incorporate a patented Universal Mounting Plate which shall allow mounting to single-gang, double-gang, 4" (10.16 cm) square, 100 mm European backboxes or Wheelock's SHBB surface backbox. No additional trim plate shall be required for flush mounting.
- Dimensions for AS/AH appliances shall be 4.625" (11.7475 cm) square by 1.5" (3.81 cm) deep.

Wheelock products must be used within their published specifications and must be PROPERLY specified, applied, installed, operated, maintained, and operationally tested in accordance with their installation 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), 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).



**WARNING!**

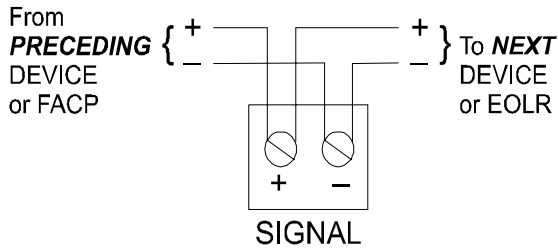
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**STALLATION INSTRUCTIONS" (Wheelock P83509 [AS], P83641 [AH-WP], and P83519 [AH]) AND "GENERAL INFORMATION" SHEET (Wheelock P82380) ON THESE PRODUCTS. THESE MATERIALS UNDERGO PERIODIC CHANGES. IT IS IMPORTANT THAT YOU HAVE CURRENT INFORMATION ON THESE PRODUCTS. THESE MATERIALS CONTAIN IMPORTANT INFORMATION THAT SHOULD BE READ PRIOR TO SPECIFYING OR INSTALLING THESE PRODUCTS, INCLUDING:**

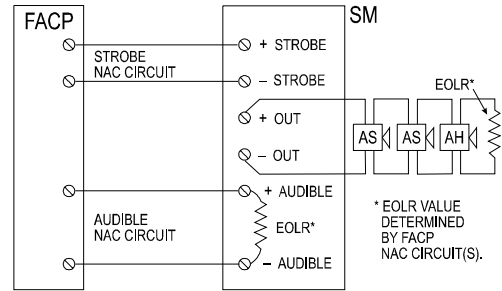
- TOTAL CURRENT REQUIRED BY ALL DEVICES CONNECTED TO SYSTEM PRIMARY AND SECONDARY POWER SOURCES.
- FUSE RATINGS ON NAC CIRCUITS TO HANDLE PEAK CURRENTS FROM ALL DEVICES ON THOSE CIRCUITS.
- COMPOSITE FLASH RATE FROM MULTIPLE STROBES WITHIN A PERSON'S FIELD OF VIEW.
- VOLTAGE APPLIED: THE VOLTAGE APPLIED TO THESE PRODUCTS MUST BE WITHIN THEIR RATED INPUT VOLTAGE RANGE.
- INSTALLATION OF 110 CANDELA STROBE PRODUCTS IN SLEEPING AREAS.
- INSTALLATION IN OFFICE AREAS AND OTHER SPECIFICATION AND INSTALLATION ISSUES.
- Note: USE AS/AH ONLY ON CIRCUITS WITH CONTINUOUSLY APPLIED OPERATING VOLTAGE. DO NOT USE AS SERIES ON CODED OR INTERRUPTED NAC CIRCUITS IN WHICH THE APPLIED VOLTAGE IS CYCLED ON AND OFF, AS THE STROBE MAY NOT FLASH.
- CONDUCTOR SPECIFICATIONS: CONDUCTOR SIZE (AWG), LENGTH AND AMPACITY SHOULD BE TAKEN INTO CONSIDERATION PRIOR TO DESIGN AND INSTALLATION OF THESE PRODUCTS, PARTICULARLY IN RETROFIT INSTALLATIONS.
- FAILURE TO COMPLY WITH THE INSTALLATION INSTRUCTIONS OR GENERAL INFORMATION SHEETS COULD RESULT IN IMPROPER INSTALLATION, APPLICATION, AND/OR OPERATION OF THESE PRODUCTS IN AN EMERGENCY SITUATION.

# Wiring Diagram

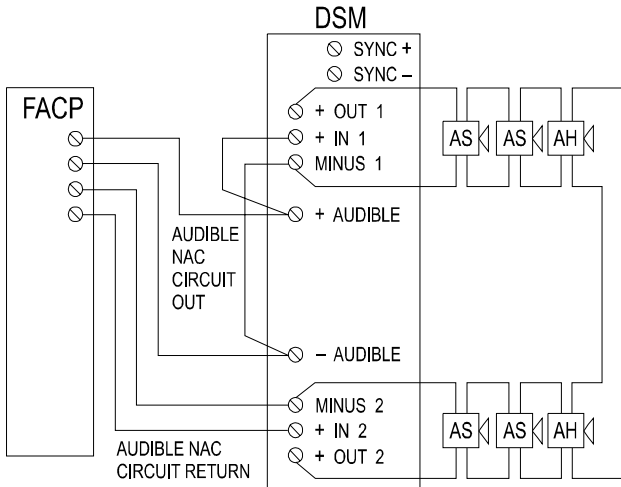
AS device non-synchronized.



AS devices synchronized with SM Module single Class "B" (Style Y) circuit WITH audible silence feature.



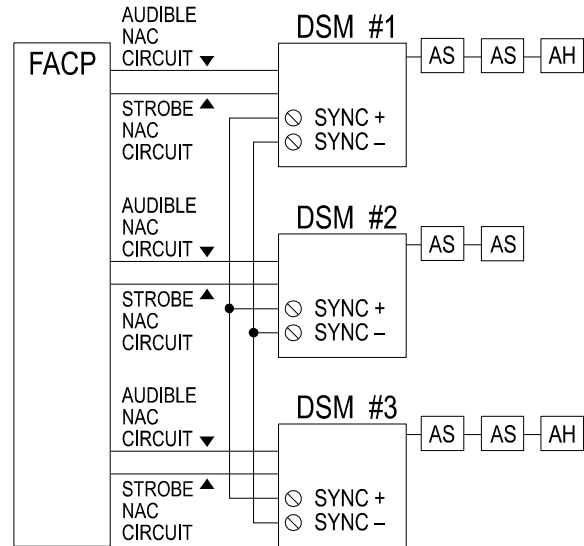
AS and AH devices synchronized with DSM Module dual Class "A" (Style Z) circuit with NO audible silence feature.



**NOTES:**

- AS/AH must be set on continuous horn tone, and connected to the SM or DSM Sync Module, to achieve synchronized temporal (Code 3) tone.

AS and AH devices synchronized with multiple DSM Modules. INTERCONNECTING WIRING SHOWN. MAXIMUM OF TWENTY (20) DSM MODULES.



## Ordering Information

MODEL	STROBE CANDELA	NON-SYNC	SYNC W/SM, DSM	VDC	WALL/CEILING MOUNT	MOUNTING OPTIONS*	AGENCY APPROVALS				
							UL	MEA	CSFM	FM	BFP
AS-24MCW-FR	15/30/75/110	X	X	24	WALL	A,B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	X
AS-24MCW-FW	15/30/75/110	X	X	24	WALL	A,B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	X
AS-241575W-FR	15 (75 on Axis)	X	X	24	WALL	A,B,D,E,F,G,H,J,N,O,R,X	X		X	X	X
AS-121575W-FR	15 (75 on Axis)	X	X	12	WALL	A,B,D,E,F,G,H,J,N,O,R,X	X		X	X	X
AS-24MCC-FW	15/30/75/95	X	X	24	CEILING	A,B,D,E,F,G,H,J,N,O,R,X	X	X	X	*	*
ASWP-2475W-FR	75 @ -31°F	X	X	24	WALL	I	X	X	X	X	X
AH-24-R	-	X	X	24	WALL/CEILING	A,B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	X
AH-12-R	-	X	X	12	WALL/CEILING	A,B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	X
AH-24WP-R	-	X	X	24	WALL/CEILING	K	X	X	X	X	X
AH-12-WP-R	-	X	X	12	WALL/CEILING	K	X	X	X	X	X

\* Refer to Mounting Options data sheet

MODEL	INPUT VOLTAGE VDC	REGULATED VOLTAGE RANGE VDC/FWR	STROBE CANDELA (cd)
AS-24MCW	24	16.0 - 33.0	15/30/75/110
AS-241575W	24	16.0 - 33.0	15 (75 on axis)
AS-121575W	12	8.0 - 17.5	15 (75 on axis)
AS-24MCC	24	16.0 - 33.0	15/30/75/95
ASWP-2475W	24	16.0 - 33.0	75 @ -31°F

DESCRIPTION	VOLUME	REVERBERANT DBA PER UL 464 @ 10 FT.	ANECHOIC DBA @ 10 FT.
Continuous Horn	High	91	99
	Medium	88	95
	Low	83	90
Code 3 Horn	High	87	99
	Medium	84	95
	Low	79	90

24 VDC MODELS		AUDIBLE		WALL MOUNT AUDIBLE STROBE MODELS						CEILING MOUNT STROBE MODELS					
		AH-24	AS-241575W	AS-24MCW				AS-24MCWH		AS-24MCC				AS-24MCCH	
			15/75cd	15cd	30cd	75cd	110cd	135cd	185cd	15cd	30cd	75cd	95cd	115cd	177cd
HIGH (99) dBA	16 vdc	0.035	0.0130	0.099	0.135	0.219	0.303	0.355	0.480	0.105	0.145	0.238	0.330	0.355	0.480
	24 vdc	0.050	0.0107	0.093	0.114	0.157	0.197	0.250	0.320	0.970	0.120	0.169	0.213	0.250	0.320
	33 vdc	0.069	0.0105	0.098	0.108	0.138	0.166	0.210	0.250	0.101	0.113	0.146	0.177	0.210	0.250
MEDIUM (95) dBA	16 vdc	0.020	0.114	0.078	0.116	0.203	0.282	0.340	0.465	0.084	0.126	0.222	0.309	0.340	0.465
	24 vdc	0.026	0.085	0.065	0.088	0.133	0.179	0.230	0.305	0.069	0.094	0.145	0.195	0.230	0.305
	33 vdc	0.035	0.075	0.065	0.078	0.206	0.134	0.180	0.230	0.068	0.083	0.114	0.145	0.180	0.230
LOW (90) dBA	16 vdc	0.014	0.108	0.070	0.111	0.201	0.279	0.335	0.460	0.076	0.121	0.220	0.306	0.335	0.460
	24 vdc	0.014	0.075	0.052	0.077	0.126	0.169	0.220	0.295	0.056	0.084	0.138	0.185	0.220	0.295
	33 vdc	0.021	0.060	0.046	0.063	0.094	0.121	0.170	0.215	0.049	0.068	0.102	0.132	0.170	0.215

12 VDC MODELS		AUDIBLE		12 VDC MODELS		AUDIBLE		12 VDC MODELS		AUDIBLE		WALL MOUNT AUDIBLE STROBE	
		AH-12	AS-121575W			AH-12	AS-121575W			AH-12	AS-121575W		
HIGH (99) dBA	8 vdc	0.093	0.320	MEDIUM (95) dBA	8 vdc	0.037	0.275	LOW (90) dBA	8 vdc	0.030	0.265		
	12 vdc	0.108	0.260		12 vdc	0.049	0.195		12 vdc	0.035	0.175		
	17.5 vdc	0.128	0.220		17.5 vdc	0.069	0.160		17.5 vdc	0.042	0.133		

\*Average RSM Current is per UL average method and Average Mean Current is per UL average mean method. AH and AS-12 models use average mean current. For rated in Rush and Peak current across the UL listed voltage range for both filtered DC and unfiltered VRMS (FWR), see installation instructions.



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MODEL NUMBER	INPUT VOLTAGE (VDC)	AVERAGE MEAN CURRENT @ 24 VDC	MOUNTING OPTIONS*
SM-12/24-R	24	.028	W
DSM-12/24-R	24	.035	W

**NOTES:**  
 SM Sync Module is rated for 3.0 amperes @ 24 VDC.  
 DSM Sync Module is rated for 3.0 amperes per circuit. The maximum number of interconnected DSM modules is twenty (20).  
 \*Refer to mounting options data sheet.

Specifications and wiring information are provided for information only and are believed to be accurate. Gamewell assumes no responsibility for their use. Data and design are subject to change without notice. Installation and wiring instructions shipped with the product shall always be used for actual installation. For more information, contact Gamewell.