



Fire-LITE[®] Alarms
INCORPORATED

July 9, 1998

G-540

Wheelock CH Series Electronic Chimes and Chime Strobes

Section: Audio/Visual Devices

GENERAL

Wheelock CH Series Electronic Chimes minimize alarm system power supply and wiring costs with a low current draw of just 20 mA. These unique solid-state chime signals provide field-selectable single-stroke or vibrating operation with sound level adjustable up to 83 peak dBA and tone adjustable from 800 to 1200 Hz. They are available in two attractive package styles for flush mounting to standard electrical boxes or convenient surface mounting.

The CH70 and CH90 models incorporate a new patent pending **chime mounting plate** for faster, easier, level installation with a new two (2) screw **grille cover** for a more aesthetically pleasing appearance. Additionally, the CH70 Series Chime Strobe models incorporate the new lower current, reduced inrush **Series RSS Non-Sync/Sync Strobes** (synchronization of the strobe flash is achieved when used with Wheelock's SM or DSM sync modules).

CH Chime Strobes are designed for maximum performance, reliability and cost-effectiveness while meeting or exceeding the latest visible signaling requirements of NFPA 72 (the National Fire Alarm Code), ANSI 117.1 (the American National Standard of Accessible and Usable Buildings and Facilities) and UL Standard 1971 (Standard for Signaling Devices for the Hearing Impaired). CH Chime Strobes, when properly specified and installed in accordance with NFPA/ANSI Standards, can provide the equivalent facilitation allowed under ADA Accessibility Guidelines (ADAAG General Section 2.2) by meeting or exceeding the illumination which results from the ADA specified strobe intensity of 75 candela at 50 feet (15.24 m). This is an illumination of 0.030 lumens per square foot (foot-candles).

The CH Series Chime Strobes are UL listed for indoor use, ceiling and wall mounted, under Standard UL 1971 for Emergency Devices for the Hearing Impaired and under Standard UL 464 for Private Mode Audible Signal Appliances. They incorporate a Xenon flashtube with solid state circuitry enclosed in a rugged LEXAN[®] lens to provide maximum reliability for effective visible signaling.

CH Series Chimes are offered in 24 VDC models and are designed to operate over a wide voltage range with filtered DC or unfiltered V_{RMS} input voltage. All models include IN/OUT wiring terminations that accept two #12 AWG (3.25 mm²) to #18 AWG (0.75 mm²) wires at each terminal. Inputs are polarized for compatibility with standard reverse polarity type supervision.

LEXAN[®] is a registered trademark of GE Plastics, a subsidiary of General Electric Company.



E5946 (CH Chimes)
E5946/S5391
(CH Strobe-Chimes)



California
State Fire
Marshal
7135-0785:109
(CH-70, CH-90)
7125-0785:143
(CH70-2415W,
CH70-241575W,
CH70-2430W,
CH70-2475W)

MEA

151-92-E Vol. XXI



FEATURES

- Strobes are designed to meet or exceed latest NFPA/ANSI Standards and ADA Accessibility Guidelines. Meets OSHA 29 Part 1910.165.
- Unique electronic chime design provides superior quality, versatile performance and improved appearance with one-tenth the current draw of most electromechanical chimes.
- Field-selectable choice of single stroke or vibrating operation with volume control and tone control.
- Low current draw with low temperature compensation to reduce power consumption and wiring costs.
- CH70 Strobe models available with 15, 15/75, 30 and 75 candela (wall mounting) ratings for operation from a single NAC circuit (in vibrating mode) or separate NAC circuits.
- Low current draw, reduced inrush, Non-Sync/Sync Strobe models are for wall-mounting only. Synchronization requires SM or DSM module(s).
- 24 VDC chime and chime strobe models with wide listed voltage range, using filtered DC or unfiltered V_{RMS}.
- Polarized inputs for compatibility with standard reverse-polarity type supervision of circuit wiring by the Fire Alarm Control Panel.

This document is not intended to be used for installation purposes. We try to keep our product information up-to-date and accurate. We cannot cover all specific applications or anticipate all requirements. All specifications are subject to change without notice. For more information, contact Fire-Lite. Phone: (203) 484-7161 FAX: (203) 484-7118



12 Clintonville Road, Northford, Connecticut 06472

ISO-9001
Engineering and Manufacturing
Quality System Certified to
International Standard ISO-9001



Made in the U.S.A.

- Low-cost installation to standard electrical boxes. Attractive flush- or surface-mounting options.
- No additional trimplate required for flush mounting. Fast installation with In/Out screw terminals using #12 (3.25 mm²) to #18 AWG (0.75 mm²) wiring.
- The 15/75 candela wall-mounted strobes are listed at 15 candela under UL Standard 1971 and meet 75 candela intensity on-axis for ADA guidelines, with low current draw.

⚠️ WARNING!

PLEASE READ THESE SPECIFICATIONS AND INSTALLATION INSTRUCTIONS CAREFULLY BEFORE USING, SPECIFYING OR APPLYING 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.

GENERAL NOTES

- Strobes are designed to flash at 1 flash per second minimum from 20 to 31 VDC. Note that ADA guidelines specify a flash rate of 1 to 3 flashes per second and NFPA-72 (1996) specify a flash rate of 1 to 2 flashes per second.
- All candela ratings represent minimum effective strobe intensity based on UL 1971.
- CH Series Strobe products are UL 1971 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.
- CH Series Chimes are listed under UL 464 for audible signal appliances.

SPECIFICATIONS & ORDERING INFORMATION

	MODEL NUMBER	STROBE CANDELA	ANECHOIC PEAK dBA @ 10 FEET (3.048 m)	dBA @ 10 FT. (3.048 m) REVERBERANT		RATED AVG. CURRENT* (AMPS) @ 24 VDC	MOUNTING OPTIONS **
				MIN.	MAX.		
24 VDC STROBE CHIMES	CH70-24-R	—	83	52	58	0.020	L, O, P, Q
	CH90-24-W	—	83	52	58	0.020	L, O, P, Q
	CH70-2415W-FR	15	83	52	58	0.070	L, O, P, Q
	CH70-241575W-FR	15/75	83	52	58	0.085	L, O, P, Q
	CH70-2430W-FR	30	83	52	58	0.101	L, O, P, Q
	CH70-2475W-FR	75	83	52	58	0.153	L, O, P, Q
SYNC MODULES***		INPUT VDC				AVG. CURRENT	
	SM-12/24-R	12 / 24				0.014 / 0.025	E, N
	DSM-12/24-R	12 / 24				0.020 / 0.038	W

NOTES: 1) CH70 is offered in *red only*. CH90 is offered in *white only*. 2) SUFFIXES USED ABOVE: 70 = square; 90 = round; W = Wall mounting; F = Fire lettering; R at end = Red; W at end = White. EXAMPLES: CH70-2415W-FR (square, Wall-mounting, Fire lettering, Red); CH90-24-W (round, White). 3) **CH-BF1-R** discontinued 12/30/97; replace with CH70-24-R and SBB-R backbox.

* **Average current** per actual Wheelock Production testing 24 VDC nominal for Chime and Chime Strobe combined. For rated average, peak, and inrush currents across the listed voltage ranges for both filtered DC and unfiltered V_{RMS}, see the installation instructions.

** For descriptions of **MOUNTING OPTIONS**, refer to Fire-Lite data sheet DF-51744, derived from Wheelock #S7000.

*** **SM Sync Modules** are rated for 3.0 amperes at 12/24 VDC; **DSM Sync Modules** are rated for 3.0 amperes per circuit. The maximum number of interconnected DSM modules is twenty (20). Refer to installation instructions for SM (Wheelock #P83123) and DSM (Wheelock #P83177).

APPLICATION NOTES

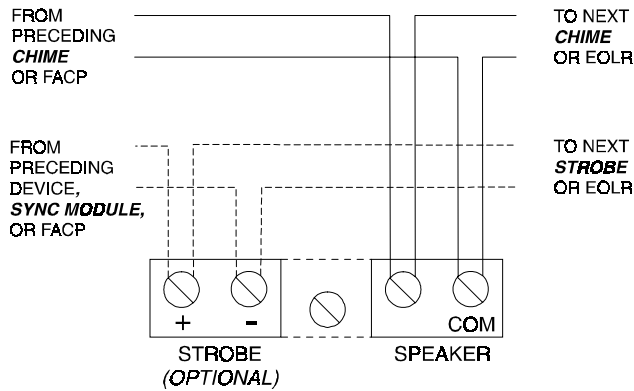
- 1) The chimes are factory-set in single-stroke (SS) mode. They can be changed to vibrating (VIB) mode with jumper on PC board. **SINGLE-STROKE OPERATION:** The minimum input pulse duration must be at least 160 ms “on” time and 160 ms “off” time. **VIBRATING OPERATION:** Continuous input voltage applied to the chime will activate the chime at one-second intervals.
- 2) The **VOLUME AND TONE CONTROLS** have been adjusted at the factory to ensure maximum dBA output. However, once the mode is selected, the installer may want to fine-tune the signal to better suit the application.
- 3) **ANECHOIC dBA** is measured in anechoic chamber with peak meter response. **REVERBERANT dBA** is rated per UL Standard 464.
- 4) **CHIME INRUSH CURRENT** is 0.100 amps maximum (0.140 amps with V_{RMS} input voltage).

QUICK REFERENCE GUIDE

MODEL NUMBER	WALL MOUNT	CEILING MOUNT	STROBE NON-SYNC	STROBE SYNC'S W/ SM OR DSM	STROBE CANDELA
CH70-24-R	X	X	X		
CH90-24-W	X	X	X		
CH70-2415W-FR	X		X	X	15
CH70-241575W-FR	X		X	X	15/75
CH70-2430W-FR	X		X	X	30
CH70-2475W-FR	X		X	X	75

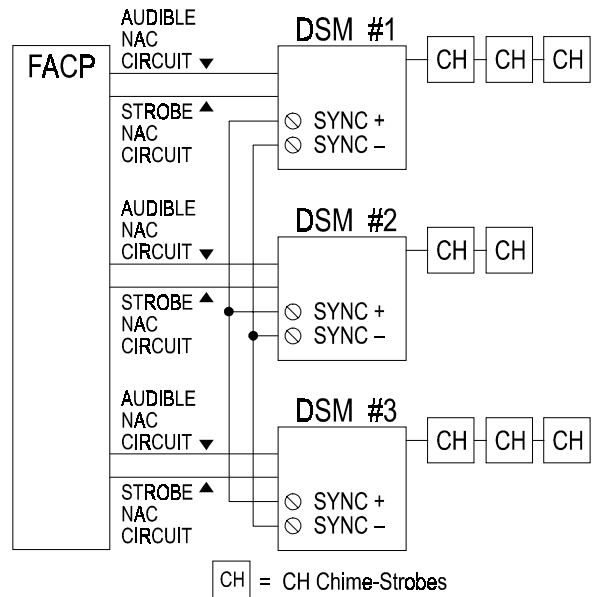
WIRING DIAGRAMS (for all models)

CH Chime and Strobe operate independently (Non-Sync or Sync).

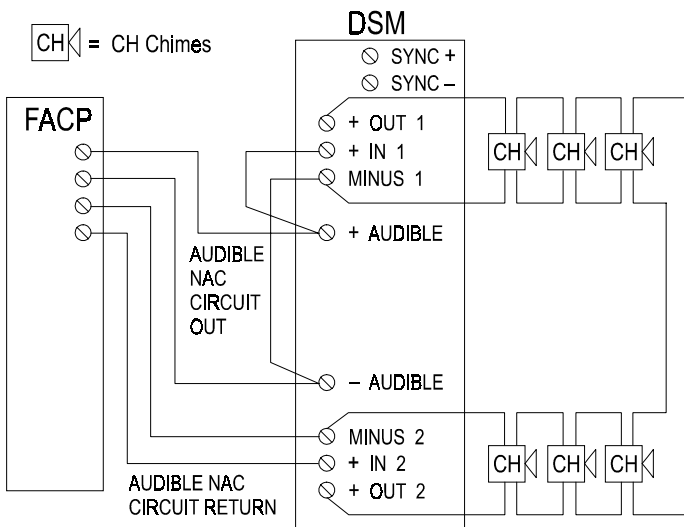


CH Strobe devices synchronized with multiple DSM Modules.

INTERCONNECTING WIRING SHOWN. MAXIMUM OF TWENTY (20) DSM MODULES.



CH Chime devices synchronized with DSM Module dual Class "A" (Style Z) circuit with NO audible silence feature.



For details on using SM or DSM Sync Modules, refer to Wheelock data sheet #S3000, or Wheelock installation instructions #P83123 (for SM) or #P83177 (for DSM).

⚠️ WARNING!

CONTACT WHEELLOCK FOR CURRENT "INSTALLATION INSTRUCTIONS" 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 SIGNALING CIRCUITS TO HANDLE MAXIMUM INRUSH OR 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 STROBES ONLY ON CIRCUITS WITH CONTINUOUSLY APPLIED OPERATING VOLTAGE. DO NOT USE STROBE 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 CAPACITY 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, WHICH COULD RESULT IN PROPERTY DAMAGE AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.

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).

ARCHITECTS' & ENGINEERS' SPECIFICATIONS

The chime appliances shall be Wheelock CH Series audible or audible/visual appliance or equivalent. Notification appliance shall be electronic and use solid state components. Electromechanical alternatives are not approved. Each electronic chime appliance shall provide field-selectable single-stroke or vibrating operation with volume control and tone control. The chime and the strobe shall be able to operate from a single NAC circuit when set to the vibrating mode. The peak anechoic dBA measurement at 10 feet (3.048 m) shall be 83 dBA minimum at nominal voltage. Operating voltages shall be 24 VDC for chimes and chime strobes using filtered power or unfiltered (V_{RMS}) power supply. All models shall have provisions for standard reverse-polarity type supervision and IN/OUT field wiring using terminals that accept #12 AWG (3.25 mm²) to #18 AWG (0.75 mm²).

Combination chime strobe appliances shall incorporate a Xenon flashtube enclosed in a rugged LEXAN® lens or equivalent with solid state circuitry that are Non-Sync or Sync in one (synchronization requires the SM or DSM Sync Module(s)). If the SM or DSM Sync Module(s) contacts fail in the passive state (i.e., contacts remain closed) the strobe shall revert to a non-synchronized flash rate of one (1) flash per second. Strobe shall meet UL 1971 and produce a flash rate of one (1) flash per second minimum over the listed input voltage (20 VDC to 31 VDC) range. The strobe intensity shall be rated per UL 1971 for 15, 15/75, 30, 75, or 110 candela for wall-mounting only. The 15/75 candela strobe shall be specified when 15 candela UL 1971 listing with 75 candela intensity on-axis is required.

All UL 1971 listed strobe appliances shall be verified to meet FCC Part 15, Class B and incorporate low temperature compensation to ensure the lowest possible current consumption. Strobe activation shall be via independent input or from the same input circuit as the chime.

The combination chime-strobe appliances may be installed indoors and surface- or flush-mounted. The chime and chime strobes shall incorporate a chime mounting plate with a grille cover which is secured with two screws for a level, aesthetically pleasing finish. They shall mount to standard electrical hardware requiring no additional trimplate or adapter. The appliance shall be finished in a textured red or white color.
