

INSTALLATION INSTRUCTIONS  
SERIES CH70/CH90 ELECTRONIC CHIMES  
VERSION 2

**GENERAL:**

The Series CH70/90 Electronic Chimes are UL Listed under Standard 1971 for Signaling Devices for the Hearing Impaired and UL Standard 464 for Private Mode Audible Signal Appliances as well as CAN/ULC-S525-16. CH70/90 Chimes are designed for low current draw and versatile performance. All models offer a choice of 1Hz, 2Hz, coded, or temporal code 3 (T3) operation, have adjustable sound level, and have a chime tone of 890Hz. The Series CH70/90 appliances also incorporate a chime mounting plate attached to the chime for ease of installation. CH70 and CH90 Chime models can provide a non-synchronized strobe appliance when connected directly to a fire alarm control panel (FACP), or provide a synchronized strobe appliance when used in conjunction with a Dual Sync Module (DSM) and Cooper Wheelock power supplies. The CH70 and CH90 Chimes are for wall or ceiling mounting. All models are Listed for indoor use only with the backboxes specified in these instructions (see wiring and mounting information). In Canada, this device is for Dwelling Use Only.

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

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

**⚠WARNING:** THE CHIME APPLIANCE IS A "FIRE ALARM DEVICE - DO NOT PAINT."

**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.

**NOTE:** In order to synchronize the Chime tone, the Chime device must **NOT** be set for coded operation see table 2 for switch settings.\* All models available in red or white.

**SPECIFICATIONS:**

Table 1: UL/ULC Listed Models and Ratings						
Models	Operating Voltage (VDC VRMS)	Maximum RMS Current Max (A)	UL dBA at 10 Feet Reverberant		ULC dBA at 10ft Anechoic	
			Min	Max	Min	Max
CH70	16-33.0	0.022	46	64	58	76
CH90	16-33.0	0.022	46	64	58	76

**WIRING AND MOUNTING INFORMATION:**

**⚠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), Cooper 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.

The Chime model has in-out wiring terminals that accept two #12 to #18 American Wire Gauge (AWG) wires at each screw terminal. Strip leads 3/8 inches and connect to screw terminals as shown in Figure 1.

Break all in-out wire runs on supervised circuits to assure integrity of circuit supervision as shown in Figure 2. The polarity shown in the wiring diagrams is for operation of the appliances. The polarity is reversed by the FACP during supervision.

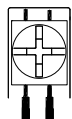


Figure: 1

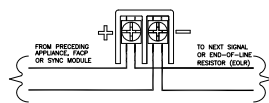


Figure: 2

**⚠WARNING:** MAKE SURE THAT THE TOTAL RMS CURRENT REQUIRED BY ALL APPLIANCES THAT ARE CONNECTED TO THE SYSTEM'S PRIMARY AND SECONDARY POWER SOURCES 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.

Table 2: Chime Tone Settings SW1		
Dip Position		MODE
1	2	
OFF	OFF	2Hz
OFF	ON	CODE 3 (T3)
ON	OFF	1Hz
ON	ON	CODED

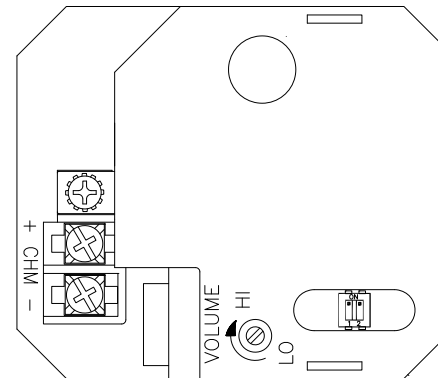


Figure: 3

The chime is factory set in code 3 (T3) mode. It can be changed before wiring the appliance with the dip switch. Refer to PC Board layout shown in Figure 3.

**CODED OPERATION:** The minimum input pulse duration must be at least 160 milliseconds "on" time and 160 milliseconds "off" time. The chime will only operate once each time it is pulsed. This mode is recommended for coded systems.

**CODE 3, 1HZ AND 2HZ:** Continuous input voltage must be applied to the chime to activate the chime in these modes

The volume and tone controls have been adjusted at the factory to insure maximum dBA output. However, once the mode is selected, the installer may want to fine tune the appliance to better suit the application.

In a synchronized tone application, the Chime will default to temporal code 3 no matter what the DIP switches are set to (cannot be set to coded).

**NOTES:**

- This model is UL/ULC Listed for indoor use with a temperature range of +32°F to +122°F (0°C to +50°C) and maximum humidity of 93% 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 is not subjected to misuse or abuse.
- The chime must be set at maximum volume for Dwelling Use listing requirements
- The chime produces a brief inrush current of 0.100 Amps with filtered DC input (0.140 Amps with full-wave-rectified (VRMS) input) with time duration of 100 milliseconds

**CAUTION:** These notification appliances are UL/ULC Listed as "Regulated". They are intended to be used with FACP's whose notification circuits are UL/ULC Listed as "Regulated." These appliances shall not be used on UL/ULC 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.

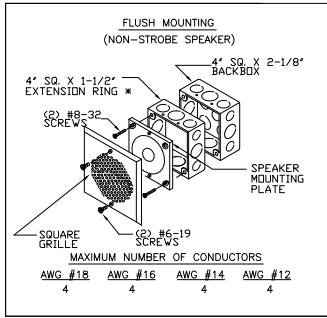


Figure 4

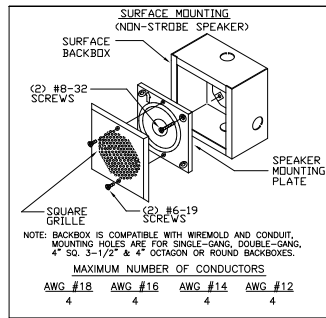


Figure 5

**GROUNDING:** Install the appliance to a grounded backbox (Per NFPA 70, the National Electrical Code) using the lockwashers provided in hardware bag under the head of each mounting screw for the appliance.

**MOUNTING PROCEDURES:**

**CAUTION:** The following figures (4,5) 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.

- 1.This model can be flush mounted to a 4" square by 2-1/8" deep backbox with a 4" square 1-1/2" extension ring or surface mounted to a Surface Backbox (Figure 5). Mounting hardware for each mounting option is supplied.
- 2.Conduit entrances to the backbox should be selected 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 signaling 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.Mount the chime mounting plate to the backbox with the cone protector on. After the chime mounting plate is attached to the backbox, remove the cone protector before installing the grille. Next, attach the grille to the chime mounting plate and attach with (2) screws.

**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:** PLEASE READ THESE INSTRUCTIONS CAREFULLY. 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

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations. Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

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