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INSTALLATION INSTRUCTIONS
SERIES STH MSR CLUSTER SPEAKER ASSEMBLY

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

MODELS:

STH-2 MSR	Red	2-STH-15SR UL Listed under UL 1480 for Speaker Appliances and 1-DC-MAX-C UL Listed under UL-1638 for strobe appliances.
STH-3 MSR	Red	3-STH-15SR UL Listed under UL 1480 for Speaker Appliances and 1-DC-MAX-C UL Listed under UL-1638 for strobe appliances.
STH-4 MSR	Red	4-STH-15SR UL Listed under UL 1480 for Speaker Appliances and 1-DC-MAX-C UL Listed under UL-1638 for strobe appliances.

GENERAL:

The series STH-MSR Cluster Speaker Assembly is designed for ceiling or wall mounting in high ambient noise level environments. The Series STH-MSR Cluster Speakers are a speaker/visual alerting systems, equipped with UL Listed STH-15SR supervised horn loudspeakers, and a UL Listed DC-MAX-C Strobe, mounted to a galvanized steel enclosure, 10"W X 10"L X 6"D. Speakers and Strobe are pre-wired to the internal terminal block. Each speaker can be wired for single or multiple speaker circuit operation.

The STH-15SR loudspeaker provides multiple power requirements with high dBA output at each power tap. STH models offer a choice of field selectable taps, 1 to 15 Watts for either 25VRMS or 70VRMS audio systems. The Series STH design incorporates a compression driver, mounted on a double re-entrant horn for maximum output at minimum power across a UL rated frequency range of 400 to 4,000Hz and an anechoic range of 400 to 14,000Hz. The individual speaker line inputs are compatible with standard supervision of circuit wiring by a Voice Control Panel. A capacitor is wired in series with the multi-tap transformer for this purpose. Each loudspeaker meets or exceeds the UL listed standards for audible signal appliances and is capable of operating within the ambient temperature range of 66º C (150º F) to -35ºC (-30ºF). This unit complies with UL Standard 1480 (Speakers for Fire Protective Signaling Systems). Additional information is available from the Installation Sheet P82697.

The DC-MAX-C strobe is a 5 inch tall, 6.2 inch diameter, cylindrical strobe light. The DC-MAX-C strobe provides a highly visible, clear lens, 100 candela and 60 double flashes per minute that can be seen in all directions. It operates on all standard voltages from 10.5VDC to 31.0VDC. The strobe appliance contains a blocking diode that allows this device to be supervised using standard reverse polarity. The DC-MAX-C strobe complies with UL Standard 1638 and is capable of operating within the ambient temperature range of 66ºC (150º F) to -35ºC (-30ºF). Additional information is available from the Installation Sheet P83857.

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

⚠ **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, SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.**

SPECIFICATIONS (SPEAKER):

Each speaker has a slotted rotating switch used to change the dB setting for the output. Table 1 shows the settings and the outputs.

Table 1: Wattage Selector Switch Settings and dBA

Setting	70V	dB	25V	dB
1	0.9W	91	Not Used	Not Used
2	1.8W	93	Not Used	Not Used
3	3.8W	96	0.48W	87
4	7.5W	98	0.94W	90
5	15.0W	101	1.8W	93
6	Not Used	Not Used	7.5W	98
7	Not Used	Not Used	15.0W	100

⚠ **WARNING: COOPER NOTIFICATION STRONGLY RECOMMENDS THAT THE VOLTAGE APPLIED TO THESE PRODUCTS BE WITHIN THEIR RATED INPUT 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.**

NOTES:
1. Power Handling Capacity (RMS): 15W
2. Sound Dispersion: 70 Degrees
3. Constant Voltage Line: 25Vrms or 70Vrms
4. Frequency Response: UL rated at 400 - 4,000Hz (@ Full Rated Output), Anechoic 400 – 14,000 Hz.
5. Sound Level (Peak): 120dB @ 15W, 1 Meter
6. Dimensions: 7-7/8W X 8-3/4H X 9-5/16L

⚠ **CAUTION:** Do not place switch in settings marked "not used". Failure to comply with these restrictions may cause damage to components and will void the warranty.

STROBE:

Table 2A: Rating Per UL					
Model Code	Lens Color	Rated Voltage	Input Current	Flash Rate	Typ. Eff. Candela
DC-MAX-C	Clear	10.5 to 31.0 VDC	See Table 2b	60/Min Typical	100cd

Table 2B: DC-MAX-C Input Current Versus Input Voltage		
Voltage (VDC)	12	24
Current (mA)	1010	470

NOTES:
1. Temperature range for all models is -30°F to +150°F (-35°C to +66°C)
2. Flash energy and flash rate are specified for double flash operation.
3. Effective candela is measured per IES specifications.

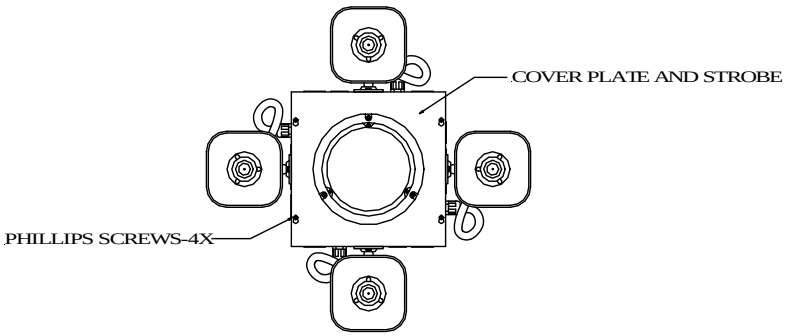
INSTALLATION INSTRUCTIONS:

SPEAKER WATTAGE SELECTOR SWITCH SETTING:
1. Remove the cable entrance interface adaptor and gasket. (See Installation Sheet P82697)
2. Adjust the Speaker Wattage Selector Switch for the desired dB and wattage setting (Table 1) for each speaker.
3. Replace the cable entrance interface adaptor and gasket.

APPLICATION NOTES:

1. Loosen the 4 Phillips screws holding the cover plate and MAX-DC-C Strobe to the enclosure box. (Figure 1)
2. Remove the cover plate and MAX-DC-C Strobe.

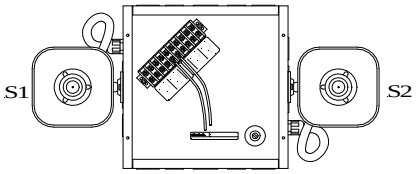
Figure 1: Phillips Screw Location



3. Mount the speaker assembly to the desired location.
4. Punch out desired knockouts and attach conduit and fittings.

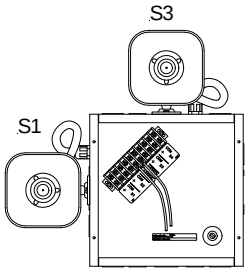
SPEAKER NUMBERING:

Figure 2: STH-2MSR



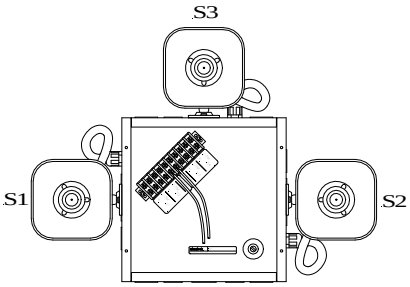
Assembly Weight - 16.7 lbs.

Figure 3: STH-2X-90



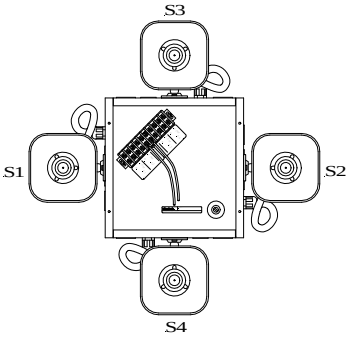
Assembly Weight - 16.7 lbs.

Figure 4: STH-3MSR



Assembly Weight - 21.2 lbs.

Figure 5: STH-4MSR



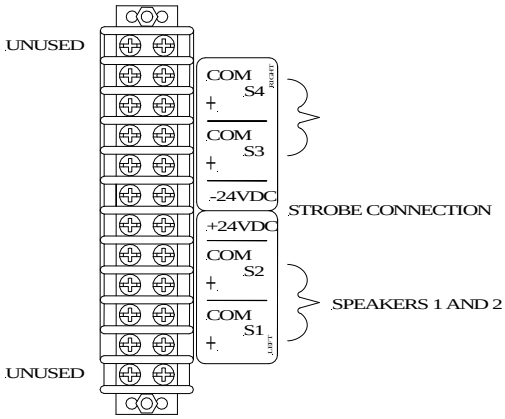
Assembly Weight - 25.7 lbs.

WIRING INFORMATION:

NOTE: The Series MAX Strobe is not designed to operate on a synchronized circuit.

1. Jumper desired speakers together in parallel on the terminal block (Figure 6) using the same gauge wire as input. (Refer to Figure 2, 3, 4 and 5 for proper model numbering sequence.)
2. Attach the speaker input wire to the proper terminals on the terminal block.
3. Attach the 24VDC strobe input wires to the ± 24VDC terminals on the terminal block.

Figure 6: Terminal Block Layout



ASSEMBLY:

1. Connect ± 24VDC pre-wires from the terminal block to the strobe pre-wires on the enclosure box cover plate using the wire-nuts (provided). (Red to red. Black to black.)
2. Replace enclosure box cover to the enclosure box and tighten the 4 Phillips Screws.
3. Adjust the angle for the speakers to point in the directions desired.

⚠ **CAUTION:** Always operate audio amplifiers and speakers within their specified ratings. Excessive input may distort sound quality and may damage audio equipment. Do not exceed +130% of speaker input voltage per UL 1480. Improper input voltage can damage speaker. If distortion is heard, check for clipping of the audio appliance with an oscilloscope and reduce the amplifier input level or gain level to eliminate any clipping.

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 cross talk).

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