



1438

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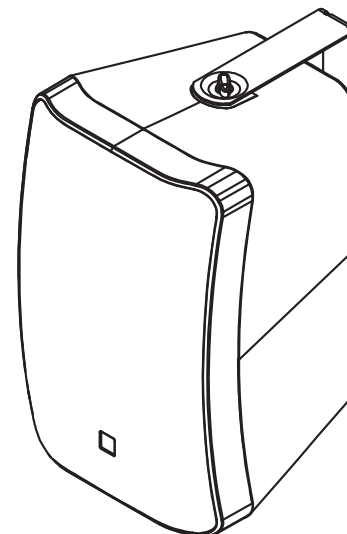
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1438-CPR-0694

EN54-24: 2008
Loudspeaker for voice alarm systems for the detection and fire
alarm systems for buildings
NWB-3
NWB-3W
NWB-5
NWB-5W
NWB-8
NWB-8W
Type B

Technical information available in paragraphs 2~10 of this manual



WALL LOUDSPEAKER INSTRUCTION MANUAL



NWB-3 (EN54-24)/NWB-3W (EN54-24)

NWB-5 (EN54-24)/NWB-5W (EN54-24)

NWB-8 (EN54-24)/NWB-8W (EN54-24)

TECHNICAL SPECIFICATIONS

Model No.	NWB-8 EN54-24	NWB-8W EN54-24
Standard	Certified to the European Standard EN 54-24:2008 Loudspeaker for voice alarm systems for fire detection and fire alarm system. Certification Cation NO.1438-CPR-0694	
Environmental Type	TYPE B (Outdoor applications)	
Enclosure protection degree(IP)	IP55/IP33C(EN54-24)	
Built-In speaker	8" full range paper speaker	8" full range paper speaker
Rated Noise Power and Voltage	80W	80W
	(100V line and 70V line)	
Rated Impedance	100V line: 125Ω (80W) 250Ω (40W) 500Ω (20W) 1.0kΩ (10W)	100V line: 125Ω (80W) 250Ω (40W) 500Ω (20W) 1.0kΩ (10W)
	70V line: 62Ω (80W) 125Ω (40W) 250Ω (20W) 500Ω (10W)	70V line: 62Ω (80W) 125Ω (40W) 250Ω (20W) 500Ω (10W)
	BYPASS-8Ω	BYPASS-8Ω
Sensitivity	87dB(1W, 1m) (500Hz - 5 kHz, pink noise)	
	76dB(1W, 4m) (100Hz - 10 kHz pink noise) according to EN54-24	
	87dB (1W,1m) (100Hz - 10 kHz, pink noise) converted based on EN54-24	
Frequency Response	50Hz - 20kHz	50Hz - 20kHz
Maximum Sound Pressure Level	87dB(80W, 4m) (100Hz - 10 kHz pink noise) according to EN54-24	
	105dB (80W,1m) (100Hz - 10 kHz, pink noise) converted based on EN54-24	
Coverage Angle(-6dB)	Horizontal: 215° (500Hz), 130° (1 kHz), 110° (2 kHz), 130° (4 kHz)	Horizontal: 215° (500Hz), 130° (1 kHz), 110° (2 kHz), 130° (4 kHz)
	Vertical: 225° (500Hz), 125° (1 kHz), 80° (2 kHz), 140° (4 kHz)	Vertical: 225° (500Hz), 125° (1 kHz), 80° (2 kHz), 140° (4 kHz)
Weight	6.3Kg/13.9LBS	6.3Kg/13.9LBS
Dimensions (L*W*D)	16" (406mm)*9.8" (250mm)*10" (251mm)	16" (406mm)*9.8" (250mm)*10" (251mm)
Speaker Component	8" paper cone speaker	8" paper cone speaker
Operating Temperature	-25°C to +70°C	-25°C to +70°C
Applicable Cable	Solid wire: φ6.0mm (18AWG) UL2464	Solid wire: φ6.0mm (18AWG) UL2464
Cable Connection	steatle terminal x 2 speaker cable with a diameter of 6mm White (+) Black(com)	
Finish	Enclosure: ABS+PC, Black Mesh speaker grill: Surface-treated steel plate, black paint Speaker Wall bracket: Surface-treated steel plate, black paint Joint bracket, screws and Stainless steel cable	Enclosure: ABS+PC, White Mesh speaker grill: Surface-treated steel plate, white paint Speaker Wall bracket: Surface-treated steel plate, white paint Joint bracket, screws and Stainless steel cable

TECHNICAL SPECIFICATIONS

Model No.	NWB-5 EN54-24	NWB-5W EN54-24
Standard	Certified to the European Standard EN 54-24:2008 Loudspeaker for voice alarm systems for fire detection and fire alarm system. Certification Cation NO.1438-CPR-0694	
Environmental Type	TYPE B (Outdoor applications)	
Enclosure protection degree(IP)	IP55/IP33C(EN54-24)	
Built-In speaker	5" full range paper speaker	5" full range paper speaker
Rated Noise Power and Voltage	40W	40W
	(100V line and 70V line)	
Rated Impedance	100V line: 250Ω (40W) 500Ω (20W) 1.0kΩ (10W) 2.0kΩ (5W)	100V line: 250Ω (40W) 500Ω (20W) 1.0kΩ (10W) 2.0kΩ (5W)
	70V line: 122Ω (40W) 250Ω (20W) 500Ω (10W) 1.0kΩ (5W)	70V line: 122Ω (40W) 250Ω (20W) 500Ω (10W) 1.0kΩ (5W)
	BYPASS-8Ω	BYPASS-8Ω
Sensitivity	85dB(1W, 1m) (500Hz - 5 kHz, pink noise)	
	74dB(1W, 4m) (100Hz - 10 kHz pink noise) according to EN54-24	
	85dB (1W,1m) (100Hz - 10 kHz, pink noise) converted based on EN54-24	
Frequency Response	80Hz - 20kHz	80Hz - 20kHz
Maximum Sound Pressure Level	85dB(40W, 4m) (100Hz - 10 kHz pink noise) according to EN54-24	
	97dB (40W,1m) (100Hz - 10 kHz, pink noise) converted based on EN54-24	
Coverage Angle(-6dB)	Horizontal: 360° (500Hz), 180° (1 kHz), 135° (2 kHz), 165° (4 kHz)	Horizontal: 360° (500Hz), 180° (1 kHz), 135° (2 kHz), 165° (4 kHz)
	Vertical: 360° (500Hz), 235° (1 kHz), 100° (2 kHz), 180° (4 kHz)	Vertical: 360° (500Hz), 235° (1 kHz), 100° (2 kHz), 180° (4 kHz)
Weight	3.2Kg/7.05LBS	3.2Kg/7.05LBS
Dimensions (L*W*D)	10.9" (278mm)*6.7" (170mm)*6.8" (172mm)	10.9" (278mm)*6.7" (170mm)*6.8" (172mm)
Speaker Component	5" paper cone speaker	5" paper cone speaker
Operating Temperature	-25°C to +70°C	-25°C to +70°C
Applicable Cable	Solid wire: φ6.0mm (18AWG) UL2464	Solid wire: φ6.0mm (18AWG) UL2464
Cable Connection	steatle terminal x 2 speaker cable with a diameter of 6mm White (+) Black(com)	
Finish	Enclosure: ABS+PC, Black Mesh speaker grill: Surface-treated steel plate, black paint Speaker Wall bracket: Surface-treated steel plate, black paint Joint bracket, screws and Stainless steel cable	Enclosure: ABS+PC, White Mesh speaker grill: Surface-treated steel plate, white paint Speaker Wall bracket: Surface-treated steel plate, white paint Joint bracket, screws and Stainless steel cable

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IMPORTANT!

Please read this manual carefully before operating this unit for the first time.

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1. SAFETY PRECAUTIONS

- Before installation or use, be sure to carefully read all the instructions in this section for correct and safe operation.
- Be sure to follow all the precautionary instructions in this section, which contain important warnings and/or cautions regarding safety.
- After reading, keep this manual handy for future reference.

Safety Symbol and Message Conventions

Safety symbols and messages described below are used in this manual to prevent bodily injury and property damage which could result from mishandling. Before operating your product, read this manual first and understand the safety symbols and messages so you are thoroughly aware of the potential safety hazards.



WARNING

Indicates a potentially hazardous situation which, if mishandled, could result in death or serious personal injury.



CAUTION

Indicates a potentially hazardous situation which, if mishandled, could result in moderate or minor personal injury, and/or property damage.



WARNING

- Use only the specified amplifier output voltage and impedance, as exceeding the specified limits could result in fire or other failures (high-impedance version).
- To avoid accidental air explosions, do not use the unit around gasoline, thinner or other combustibles.
- Install the unit only in a location that can structurally support the weight of the unit and the mounting bracket. Doing otherwise may result in the unit falling down and causing personal injury and/or property damage.
- Protect the unit from exposure in snowy areas, as the weight of snow build-up could cause the speaker to fall, resulting in personal injury.
- Do not use other methods than specified to mount the bracket. Extreme force is applied to the unit and the unit could fall off, possibly resulting in personal injuries.
- Tighten each nut and bolt securely. Ensure that the bracket has no loose joints after installation to prevent accidents that could result in personal injury.
- Avoid mounting the unit in locations exposed to constant vibration. The mounting bracket can be damaged by excessive vibration, potentially causing the speaker to fall, which could result in personal injury.



CAUTION

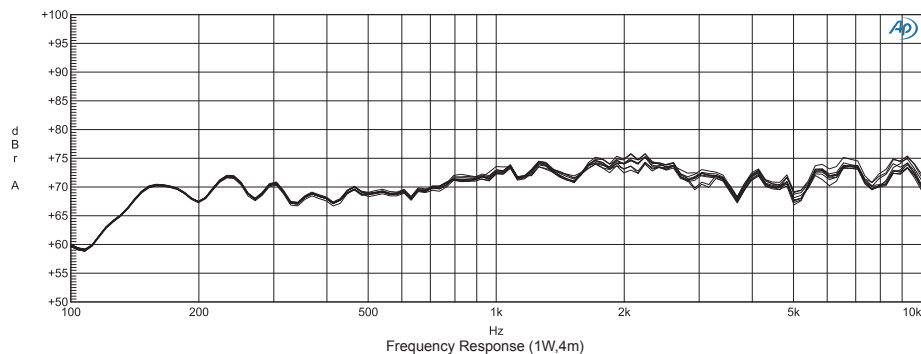
- To avoid electric shocks, be sure to switch off the amplifier power when connecting the speaker.
- Avoid installing the unit in humid or dusty locations, or in locations exposed to heaters, solvents, acid, alkali, smoke, steam or direct sunlight (except outdoor-use versions), as excessive exposure to these factors could result in speaker failure, fire or electric shock.
- Do not operate the unit for an extended period of time with the sound distorting. This is an indication of a malfunction, which in turn can cause heat to generate and result in a fire.
- Do not stand or sit on, nor hang down from the unit as this may cause it to fall down or drop, resulting in personal injury and/or property damage.

TECHNICAL SPECIFICATIONS

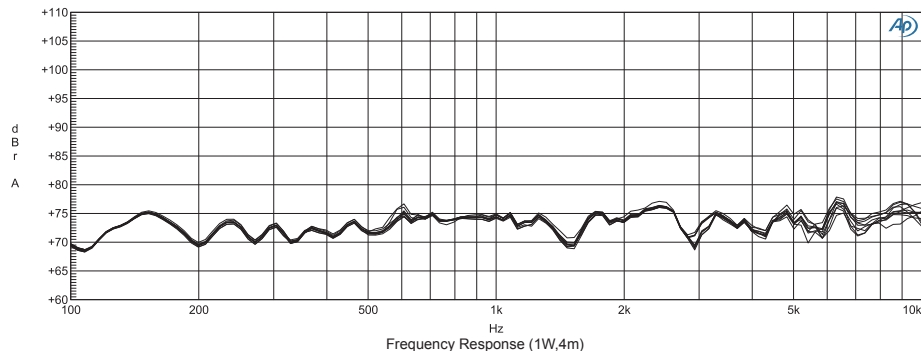
Model No.	NWB-3 EN54-24	NWB-3W EN54-24
Standard	Certified to the European Standard EN 54-24:2008 Loudspeaker for voice alarm systems for fire detection and fire alarm system. Certification Cation NO.1438-CPR-0694	
Environmental Type	TYPE B (Outdoor applications)	
Enclosure protection degree(IP)	IP55/IP33C(EN54-24)	
Built-In speaker	3.5" full range paper speaker	3.5" full range paper speaker
Rated Noise Power and Voltage	20W	20W
	(100V line and 70V line)	
Rated Impedance	100V line: 500Ω (20W) 1.0kΩ (10W) 2.0kΩ (5W) 4.0kΩ (2.5W)	100V line: 500Ω (20W) 1.0kΩ (10W) 2.0kΩ (5W) 4.0kΩ (2.5W)
	70V line: 250Ω (20W) 500Ω (10W) 1.0kΩ (5W) 2.0kΩ (2.5W)	70V line: 250Ω (20W) 500Ω (10W) 1.0kΩ (5W) 2.0kΩ (2.5W)
	BYPASS-8Ω	BYPASS-8Ω
Sensitivity	83dB(1W, 1m) (500Hz - 5 kHz, pink noise)	
	70dB(1W, 4m) (100Hz - 10 kHz pink noise) according to EN54-24	
	83dB (1W,1m) (100Hz - 10 kHz, pink noise) converted based on EN54-24	
Frequency Response	130Hz - 20kHz	130Hz - 20kHz
Maximum Sound Pressure Level	83dB(20W, 4m) (100Hz - 10 kHz pink noise) according to EN54-24	
	95dB (20W,1m) (100Hz - 10 kHz, pink noise) converted based on EN54-24	
Coverage Angle(-6dB)	Horizontal: 360° (500Hz), 190° (1 kHz), 120° (2 kHz), 210° (4 kHz)	Horizontal: 360° (500Hz), 190° (1 kHz), 120° (2 kHz), 210° (4 kHz)
	Vertical: 360° (500Hz), 185° (1 kHz), 90° (2 kHz), 170° (4 kHz)	Vertical: 360° (500Hz), 185° (1 kHz), 90° (2 kHz), 170° (4 kHz)
Weight	2.3Kg/5.07LBS	2.3Kg/5.07LBS
Dimensions (L*W*D)	8.6" (220mm)*5.3" (134mm)*5.4" (136mm)	8.6" (220mm)*5.3" (134mm)*5.4" (136mm)
Speaker Component	3" paper cone speaker	3" paper cone speaker
Operating Temperature	-25°C to +70°C	-25°C to +70°C
Applicable Cable	Solid wire: φ6.0mm (18AWG) UL2464	Solid wire: φ6.0mm (18AWG) UL2464
Cable Connection	seatile terminal x 2 speaker cable with a diameter of 6mm White (+) Black(com)	
Finish	Enclosure: ABS+PC, Black Mesh speaker grill: Surface-treated steel plate, black paint Speaker Wall bracket: Surface-treated steel plate, black paint Joint bracket, screws and Stainless steel cable	Enclosure: ABS+PC, White Mesh speaker grill: Surface-treated steel plate, white paint Speaker Wall bracket: Surface-treated steel plate, white paint Joint bracket, screws and Stainless steel cable

FREQUENCY RESPONSE

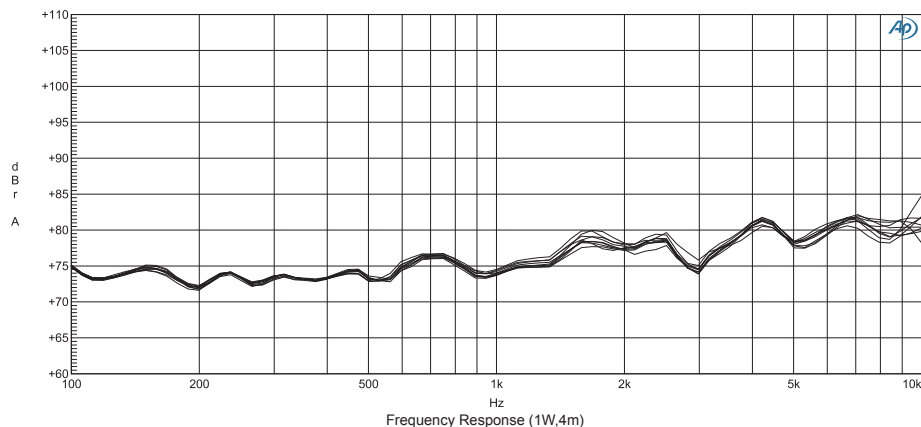
NWB-3 EN54-24/NWB-3W EN54-24 Frequency Response



NWB-5 EN54-24/NWB-5W EN54-24 Frequency Response



NWB-8 EN54-24/NWB-8W EN54-24 Frequency Response



2. GENERAL DESCRIPTION

Speakers are compact sphere loudspeaker systems designed for high efficiency, wide range, and high power input handling capability. These speaker systems can be installed in a manner ideal for the location and intended application. The speaker is certified to the European Standard EN 54 24:2008.

3. FEATURES

- Wide directivity high-frequency horn.
- Supplied bracket permits mounting to a wall.
- The impedance change can be obtained by changing the cable connection.
- Certified to EN 54-24:2008.

4. IMPEDANCE CHANGE

To change the impedance, press the corresponding input voltage and power on the power label sticker indicated on the cable and connect the corresponding cable to get the required input power.

NWB-3/NWB-3W

INPUT		
	100V	70V
8Ω(BYPASS)	—	—
250Ω	—	20W
500Ω	20W	10W
1KΩ	10W	5W
2KΩ	5W	2.5W
4KΩ	2.5W	—

NWB-5/NWB-5W

INPUT		
	100V	70V
8Ω(BYPASS)	—	—
122Ω	—	40W
250Ω	40W	20W
500Ω	20W	10W
1KΩ	10W	5W
2KΩ	5W	—

NWB-8/NWB-8W

INPUT		
	100V	70V
8Ω(BYPASS)	—	—
62Ω	—	80W
125Ω	80W	40W
250Ω	40W	20W
500Ω	20W	10W
1KΩ	10W	—

Select the appropriate preset input voltage and output power to take equipment connections, detail specifications please refer to the loudspeaker body denotings or the following Product Specifications. Attention: The wrong preset will damage or shorten the life of the apparatus.

Please read the instructions in details before you use, and follow the contents to do the most proper installation. After you have made the proper installation, please keep this instruction well for your references at any time.

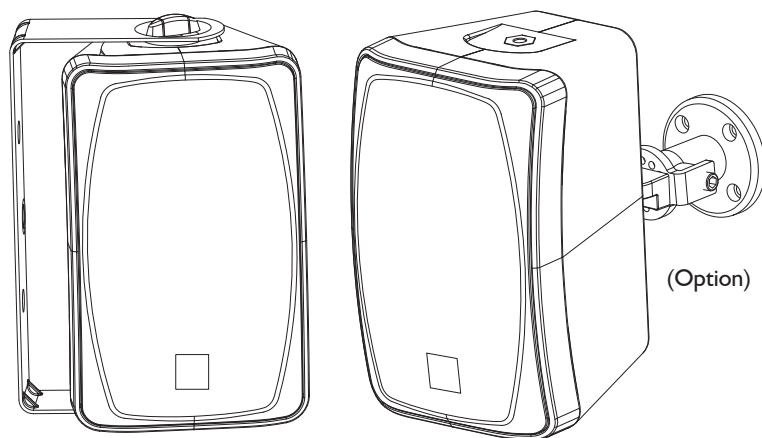
If you would like to do any changes for the installation regarding this product, please must make sure if the specifications are correct or not. Otherwise, the incorrect installation will probably result in the permanent damage to this product, therefore, please use it with cautions.

Cautions:

1. Absolutely not to do the installation that exceeds the specifications of this products because it will result in affecting the life and the capacity with regard to this product.
2. Keep away from the place that wets in rain directly if installing at outside.
3. Do not clean the appearance of the column speaker with an organic solvent or alcoholic detergent.
4. Do not repair or disassemble the product yourself if there is any damage or unusual situation, please should contact the person in charge of service immediately.

INTRODUCTION

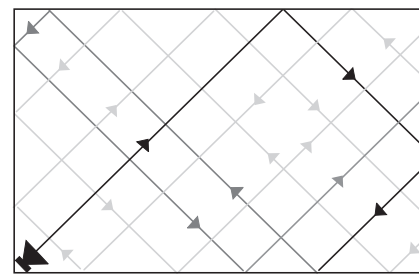
NWB Series is a professional column array speaker developed . With 1.0mm mesh and 1.0mm grille, it can effectively protect unit from external damage and prevent dust into the speaker. Cabinet is made by aluminum alloy with coating, to make delicate touch. steel .The system apply power transformers to switch power, effectively protect the units. To prevent high power input signal damage units, they can be used in parallel to avoid causing damage to the PA amplifier with low impedance. Locked bracket screws to fixed plate inside cabinet. The fixing plate with 3 mm thick iron can effective decompose the bracket pull force.



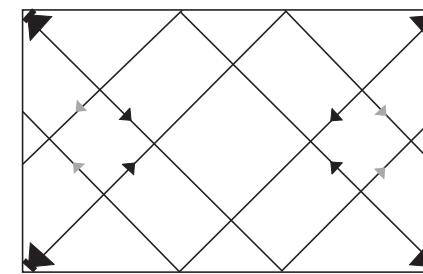
INDOOR INSTALLATION DESCRIPTION

INDOOR INSTALLATION DESCRIPTION:

NSP(MB) series speakers are designed specially for fixing and using in different circumstances. The property of speakers may be different due to different circumstances. There is an acoustic surface (wall) in a closed room, so the acoustic indoor will turn complex. When acoustic wave hits the surface, a part of acoustic energy is reflected, and others are absorbed. Reflection and absorption are depending on the frequencies of acoustic wave and angle of hitting surface. When operate the cabinet, both man and furniture can absorb the acoustic energy. Please note the position of man and furniture when installing. Reverberation is the results of the reflected acoustic wave continue bouncing between the surfaces. Every reflection will loss the energy. When the acoustic hit the reflection surface, the room will be filled with random reflected acoustic wave. The music and address will be complex. It is recommended that install more speakers and make the volume of speakers lower to reduce the reverberation in high reverberating room. (Please see figure 5B)

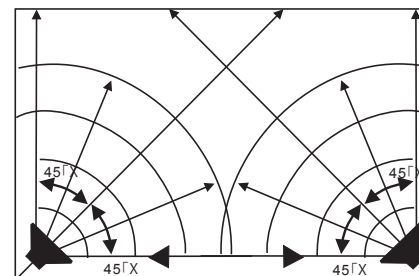


ONE LOUD SPEAKER
(figure5A)

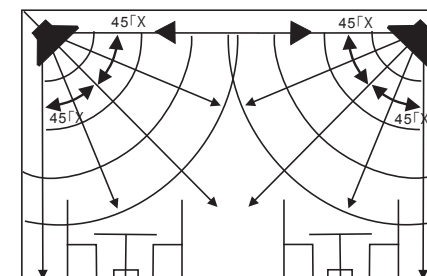


MULTIPLE QUIET SPEAKERS
(figure5B)

Speaker coverage range - Direct the center axle of the speaker to the flat surface of receiving area. The speakers of 90°x90° series can spread the speaker tone to all the directions at the axle of 45°. If you use the speakers in large room, you can divide the room to some zones. Then decide the installing location of the speakers . (Please see figure 6)



HORIZONTAL



VERTICAL

(figure6)

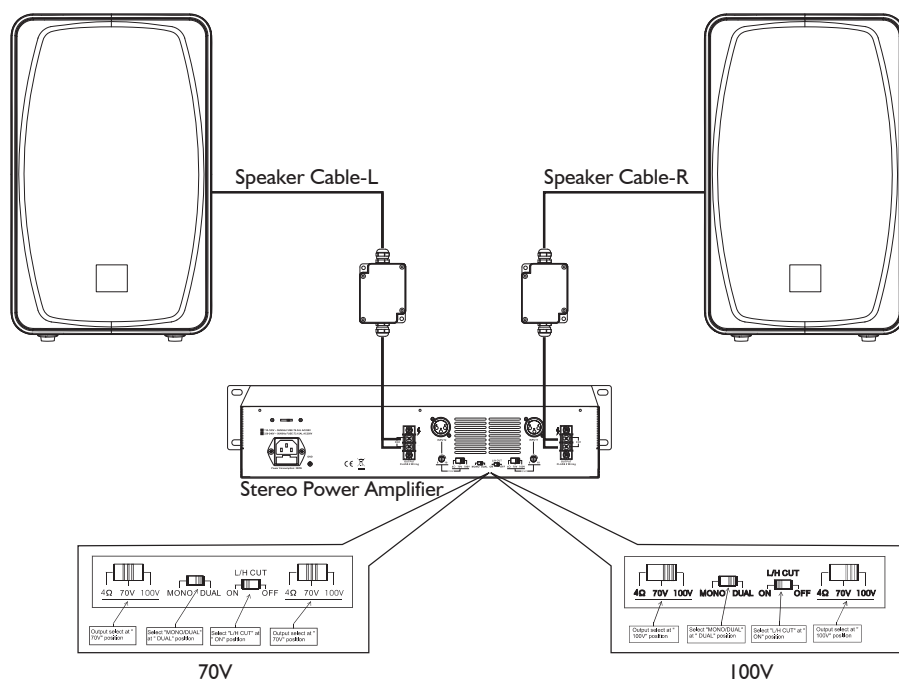
SYSTEM CONNECTION PLATE

CH1/CH2 loaded with 70V, dual channel input:

1. Select "MONO/DUAL" at " DUAL" position, dual channel input;
2. CH1/CH2 output select at " 70V" position, both loaded with rated 70V speaker;
3. Select "L/H CUT" at " ON" position, to prevent low frequency protection and improve the transmission efficiency. Applicable to Public Address System.

CH1/CH2 loaded with 100V, dual channel input:

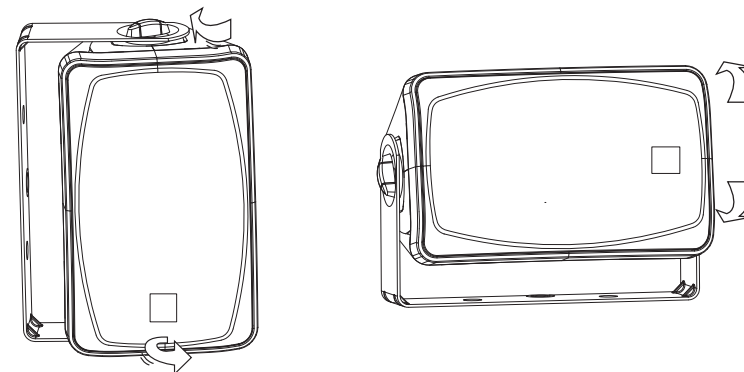
1. Select "MONO/DUAL" at " DUAL" position, dual channel input;
2. CH1/CH2 output select at " 100V" position, both loaded with rated 100V speaker;
3. Select "L/H CUT" at " ON" position, to prevent low frequency protection and improve the transmission efficiency. Applicable to Public Address System;



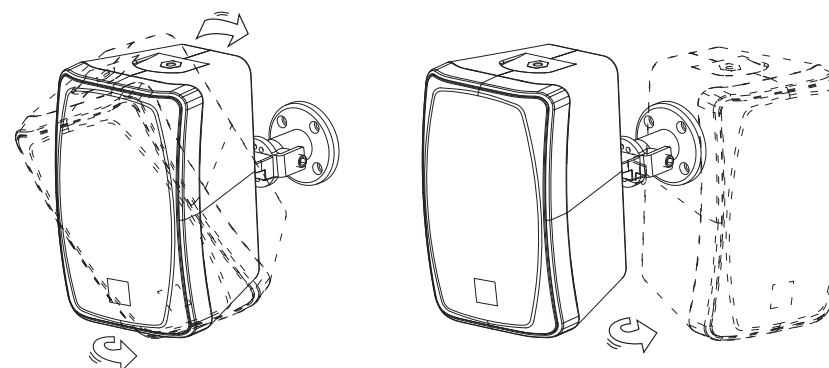
INSTALLATION

- 1) Make sure the expansion screws of mounting brackets can firmly support the product weight before installation to avoid causing the injuries of the facilities and a worker if there is a falling.
- 2) Make sure the bracket is installed in vertical position and install expansion screw in the identified location.
- 3) Lock the bracket (in attached) to the wall enough tightly and ensure it's vertical between bracket and wall.
- 4) Remove the 2*M6/or 4*M5 screws on back of speaker and fix it to the racket via the screws (in attached). Please make the column straight and firmly locked.
- 5) Adjust the speaker to appropriate angle with bracket adjustable $-90^{\circ} \sim 90^{\circ}$ for U bracket.
- 6) Please first confirm the system you connected output of 100V, 70V. And make the cables connected.

• U bracket angle control ($-90^{\circ} \sim 90^{\circ}$)



• Y bracket(angle horizon $-90^{\circ} \sim 90^{\circ}$,angle vertical $-70^{\circ} \sim 70^{\circ}$)



BACK PANEL DESCRIPTION

POWER SELECTIONS

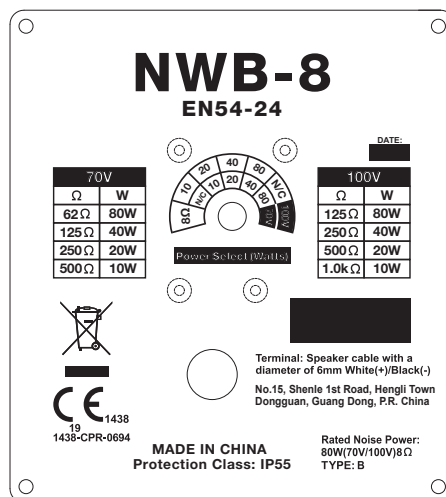
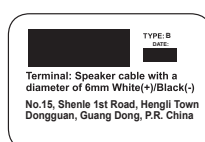
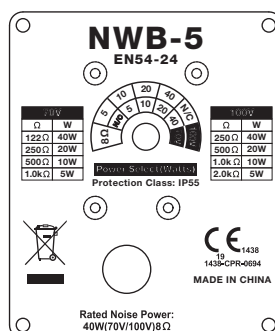
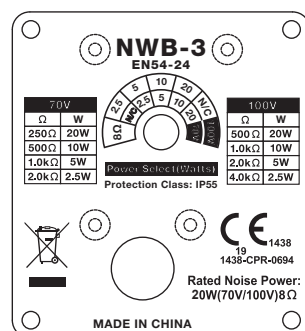
(1) Input Connection

The Positive connection is usually marked with(+)White cable,Use it to connect the amplifier output(+).

The Negative connection is usually marked with(-)Black cable,Use it to connect the amplifier output(-).

(2) Power Selections

With this rotary switch, it is possible to select the power level of the NWB Series from minimum to maximum, for two different Constant Voltages 70V or 100V. In Off position the speaker system is disconnected from the Line.



WIRING

WIRING

Step1: Remove the junction box cover screw, loosen the nut on the cable fixing head, and remove the cable fixing head from the junction box.

Step2: Pass the cable through the cable clamp of the separating nut for a certain length, then through the junction box and nut. Tighten the cable fixing head and fix it.

Step3: Select the appropriate power input and output by referring to the type of machine on the host or the power mark on the cable line. After the selection, find the corresponding impedance according to the selected power source and power. Connect the line according to the connection port of the terminal corresponding to the impedance on the connection mark in the junction box and tighten the screw.

Step4: Cover the bottom cover with the connected cable on the top cover and lock the screw.

