VM-3000 - VX-2000 - SX-2000
Integrated Voice Alarm Management & Evacuation Systems

TOA

the future is **safe&sound**

TOA Quality Assurance

The EN 54 Marque - TOA's Commitment to Quality

EN 54 is a standard marque of the European Union (EU) for fire detection and fire alarm systems. The relevant parts to the voice alarm and audio industry are part 16, which are concerned with voice alarm control and indicating equipment (*VACIE*), part 24, refers to loudspeakers and part 4, refers to power supplies

The EN 54 standard is a EU regulation and therefore mandatory in each EU member state without the necessity of being adopted as a national standard. It belongs to the Construction Product Directive (*CPD, 89/106/EEC*) and requires a certification by a notified body (which ensures a high product quality and reliability).

The EN 54 will come into force April 2011

It is imperative that installers and consultants follow these new regulations in order to maintain the continuity of quality and safety when designing and installing voice alarm systems. This will enable them to spearhead better integration of Voice Alarm (*VA*) and Public Address (*PA*) as the directive takes hold. Furthermore EN 54 will play a significant role in the market for Voice Evacuation as the member states of the European Union will be obliged to replace their local standards with the EN 54 standard by April 2011.

As part of TOA's commitment to professionalism, quality, service and support, we pride ourselves on being the first to be awarded this prestigious and highly respected award.
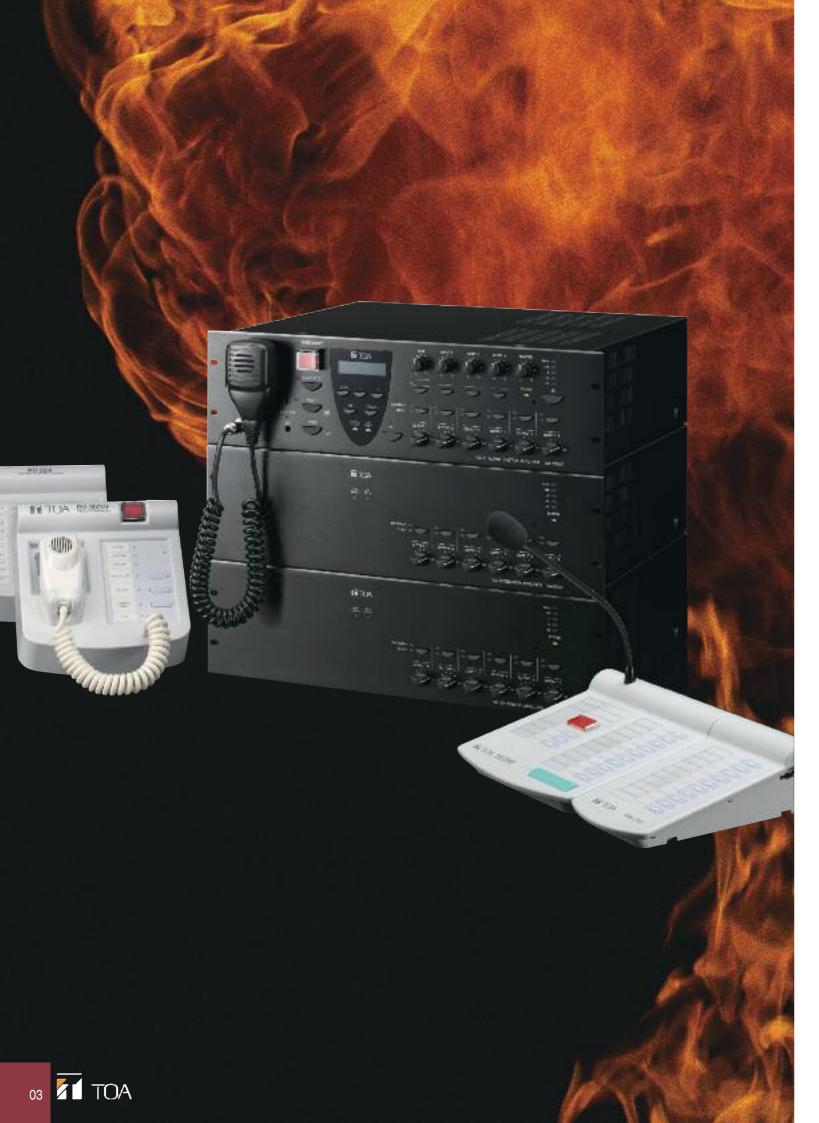
Human society with Sound & Communication

Content

VM-3000 series
PA Management System

VM-3000 - Description

The VM-3000 Series is digitally audio processed and controlled, with fully digital audio mixing and a built-in high-quality electronic voice message feature. The system may be set up directly using the controls and LCD display on the front panel, which also enables easy operation of the system. Operational versatility is further enhanced by a dedicated PC software configuration capability for uploading and downloading settings via LAN.

The incorporation of wide-ranging functional capabilities, superb reliability and versatility make the VM-3000 a highly cost-effective emergency broadcast system.

System Features

- Max. 4 MIC/LINE inputs
- 2 BGM inputs
- Up to 4 Remote Microphones connectable (max. 2 Fireman's Microphones)
- Max. 60 assignable speaker zone outputs (6 zones per amplifier)
- Volume setting possible for each zone
- Digital audio processed & controlled
- Full digital audio mixing (DSP)
- Built-in high quality electronic voice message
- Intuitive configuration
- Zone setting, priority setting, failure detection setting by dedicated PC software
- LCD display of current status and configuration setting of system units.

Emergency Functions

- Continuous speaker line monitoring without interruption of BGM distribution or paging announcements
- Complete fault detection and indication
- Both built-in and remote Fireman's Microphones
- Built-in voice alarm message
- 2-Phase voice alarm message (Alert and Evacuation) broadcasting

Paging Functions

- 2 Remote Microphone interface lines
- Paging (All zones/Group/Individual) 2-channel broadcast with external amplifier (Paging/BGM)

First fully EN 54 certified voice alarm system

EN54
16

VM-3240VA/VM-3360VA

Features

▶ Central units in the VM-3000 system
▶ Power outputs 240 W (VM-3240VA) and 360 W (VM-3360VA)
▶ 1 unit per system
▶ Front panel-mounted LCD display for Setting and operation status
▶ Automatic message function
▶ Play back of up to 6 recorded general announcements and 2 recorded emergency announcements
▶ Up to 2 RM-300MF Emergency Remote Fireman's Microphones can be connected
▶ Up to a total of 4 RM-200M General Broadcast Remote Microphones and RM-300MF Fireman's Microphones can be connected

Options

▶ VM-3240E: 240 W Extension Amplifier
▶ VM-3360E: 360 W Extension Amplifier
▶ RM-300MF: Emergency Microphone
▶ RM-200M: Remote Microphone
▶ IT-450: Input Transformer

Specifications	VM-3240VA	VM-3360VA
Power Requirement	230 V AC, 50/60 Hz	
Power Consumption (AC mains)	600 W (with rated output signal), 260 W (according to EN60065)	850 W (with rated output signal), 380 W (according to EN60065)
Rated Output	240W	360W
Frequency Response	50 – 20,000 Hz, ±3dB (at 1/3 rated output)	50 – 20,000 Hz, ±3dB (at 1/3 rated output)
Distortion	Under 0.8% (at rated output, 1kHz)	Under 0.8% (at rated output, 1kHz)
Signal-to-Noise Ratio	Over 85dB	Over 85dB
Inputs	Input 1 – 3: -50 dB* (MIC)/-10dB (LINE) (changeable) 600 Ohm, electronically balanced combined XLR connector (female)/phone jack	
	Input 4: -50 dB* (MIC) / -10 dB (LINE) (changeable) 600 Ohm, electronically balanced, removable terminal block (14 pins)	
	BGM 1 – 2 : -10 dB, 10 kOhm unbalanced, RCA pin jack	
	External amplifier Input: 100 V Line removable terminal block (14 pins)	
Outputs	Speaker output 1 – 6: Total within rated output, removable terminal block (14 pins), Direct output from internal or external amplifier, removable terminal block (16 pins)	
	Recording output BGM / Paging 0 dB*, 10 kOhm, unbalanced, RCA pin jack	
Control	Input 1 – 8: No-Voltage make contact input, open voltage: 24V DC, short-circuit current: under 2mA, removable terminal block (14 pins)	
	Output 1 – 8: Isolated open collector output, with stand voltage: 30V DC, operating current: under 10mA, removable terminal block (14 pins)	
Emergency Control	Input 1 – 5: No-Voltage make contact input, open voltage : 24V DC, short-circuit current: under 2mA, RJ45 female connector	
	Input 6: Isolated voltage input: Inactive; -24V ±20%/Active; +24V ±20%, RJ45 female connector	
	Status out: Relay contact output, withstand voltage: 40V DC, operating current: 2 – 300mA, RJ45 female connector	
DC-24 V-Output	24 V DC, naximum feeding current 0.3 A	24V DC ±10% Maximum feeding current 0.4A
Dimensions (W x H x D)	482 (W) x 132.6 (H) x 460 (D)mm	482 (W) x 132.6 (H) x 460 (D)mm
Weight	16.5 kg	19kg

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VM-3000 Series
Extension Amplifier

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First fully EN 54 Certified Voice Alarm System

VM-3240E/VM-3360E

Features

▼ System can be expanded by connecting up to 9 VM-3240E or VM-3360E Extension Amplifiers. The 240 W VM-3240E and 360 W VM-3360E are both equipped with 6 speaker line outputs. Both also feature 8 contact inputs and 8 contact outputs for general broadcasts and 6 inputs and 3 outputs for emergency broadcasts. They are connected to the VM-3240VA or VM-3360VA via the VM Link connector.
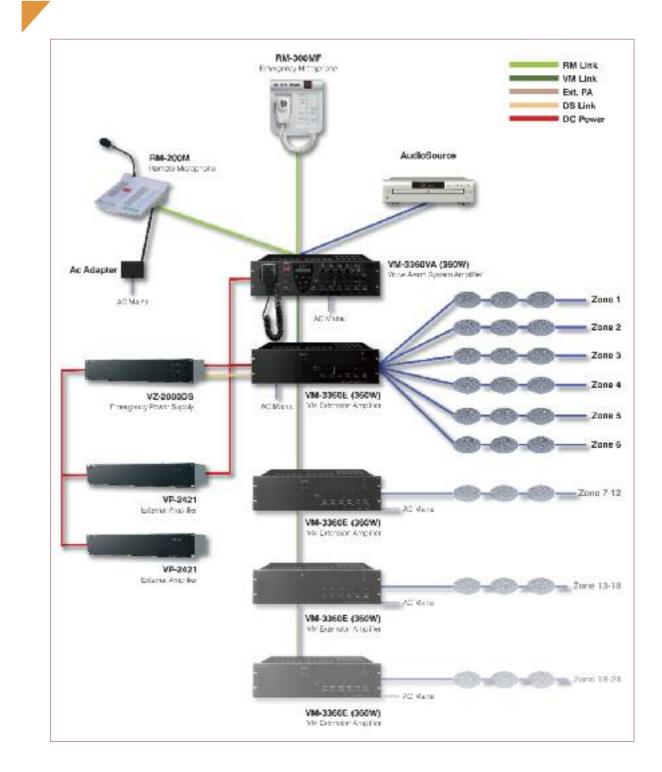
▼ EN54-16 Certificate No. 1438/CPD/0180

Options

▼ VM-3240VA: 240 W System Amplifier
▼ VM-3360VA: 360 W System Amplifier
▼ IT-450: Input Transformer

Specifications

Specifications	VM-3240E	VM-3360E
Power Requirement	230 V AC, 50/60 Hz	
Power Consumption (AC mains)	600 W (with rated output signal), 260 W (according to EN60065)	850 W (with rated output signal), 380 W (according to EN60065)
Rated Output	240W	360W
Frequency Response	50 – 20,000 Hz, ±3dB (at 1/3 rated output)	50 – 20,000 Hz, ±3dB (at 1/3 rated output)
Distortion	Under 0.7% (at rated output, 1kHz)	Under 0.8% (at rated output, 1kHz)
Signal-to-Noise Ratio	Over 85dB	Over 85dB
Inputs	External amplifier Input: 100 V Line removable terminal block(14 pins)	
Outputs	Speaker output 1 – 6: Total within rated output, removable terminal block (14 pins) Direct output from internal or external amplifier, removable terminal block (16 pins)	
Control	Input 1 – 8: No-Voltage make contact input, open voltage: 24V DC, short-circuit current: under 2mA, removable terminal block (14 pins)	
Output	1 – 8: Isolated open collector output, withstand voltage: 30V DC, operating current: under 10mA, removable terminal block (14 pins)	
Emergency Control	Input 1 – 5: No-Voltage make contact input, open voltage : 24V DC, short-circuit current: under 2mA, RJ45 female connector Input 6: Isolated voltage input: Inactive; -24V ±20%/Active; +24V ±20%, RJ45 female connector Status out: Relay contact output, withstand voltage: 40V DC, operating current: 2 – 300mA, RJ45 female connector	
DC-24 V-Output	24 V DC, maximum feeding current 0.3 A	24V DC. maximum feeding current 0.4A
Dimensions (W x H x D)	482 x 132.6 x 407	482 (W) x 132.6 (H) x 460 (D)mm
Weight	16.5 kg	19 kg

VM-3000 Series
Application Example

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VM-3000 Series
Emergency Remote Microphone

Alarm Switch

RM-300MF   Microphone   Function keys   RM-320F

Features

▸ **Exclusively for broadcasts made by firemen in emergency situations**
▸ **For activation of emergency mode, start and stop automatic broadcasts of emergency announcements, reset emergency signals, and live microphone announcements**
▸ **CPU OFF switch allows all-zone calls (simultaneous attenuator-free global calls).**
▸ **No general broadcasts can be made.**

▸ **The RM-320F Emergency Microphone Extension enables zone selection or failure indication/failure acknowledgment function.**
▸ **Up to 3 RM-320Fs can be connected to the Emergency Microphone, expanding the available keys up to 20 per unit.**
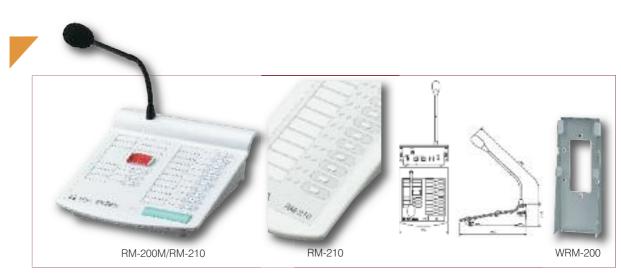▸ **20 function buttons per unit.**
▸ **Zone selection (1 – 20) and failure indication/acknowledgement functions can be assigned to each function key using the dedicated software.**

Specifications

Specifications	RM-300MF	RM-320F
Power Requirement	24 V DC (Operating range: 14 – 28 V DC)	From RM-200X/M/XF
Current Consumption	100 mA (up to 550 mA with 3x RM-320F)	155 mA max. (in terms of DC power inputs of RM-300MF)
Distortion	Under 1%	-
Frequency Response	200 – 15,000 Hz	-
Signal-to-Noise Ratio	Over 55 dB	-
Audio Output	0 dBV, 600 Ohm, balanced	-
Microphone	Unidirectional dynamic microphone	-
Volume Control	Microphone, buzzer	-
Operation key	Emergency button, Evacuate button, Alert button, Emergency reset key, CPU switch, Reset switch	
Key Extension	20 keys extension per RM-320F, extension connector	20
Connection Cable	Shielded CPEF cable or Category 5 STP cable, M3 screw terminal	Connection to RM-200M, RM-200X or RM-200XF by way of dedicated cable
Finish	ABS resin, bluish gray	ABS resin, bluish grey (PANTONE 538 or its equivalent)
Dimensions (W x H x D)	200 × 215 × 82.5 mm	110 x 76.5 x 215 mm
Weight	1.1 kg	350 g

VM-3000 Series
Remote Microphone

RM-200M/RM-210   RM-210   WRM-200

Features

▸ **Elegent design**
▸ **Zone, group and all-call paging, and starting pre-recorded messages**
▸ **Indication of sytem failure, line failure, busy zones etc.**
▸ **Extraordinary clarity and freedom from distortion by built-in compression circuit**
▸ **Up to 4 remote microphones can be connnected to the VM-3000 system amplifier**

▸ **Up to 800 m total cable length**
▸ **RM-210: Allows announcements in up to 60 zones**
▸ **Colour: Bluish grey**

Options

▸ **WH-4000A: Headset**
▸ **WB-RM200: Wall-mounting bracket**

Specifications
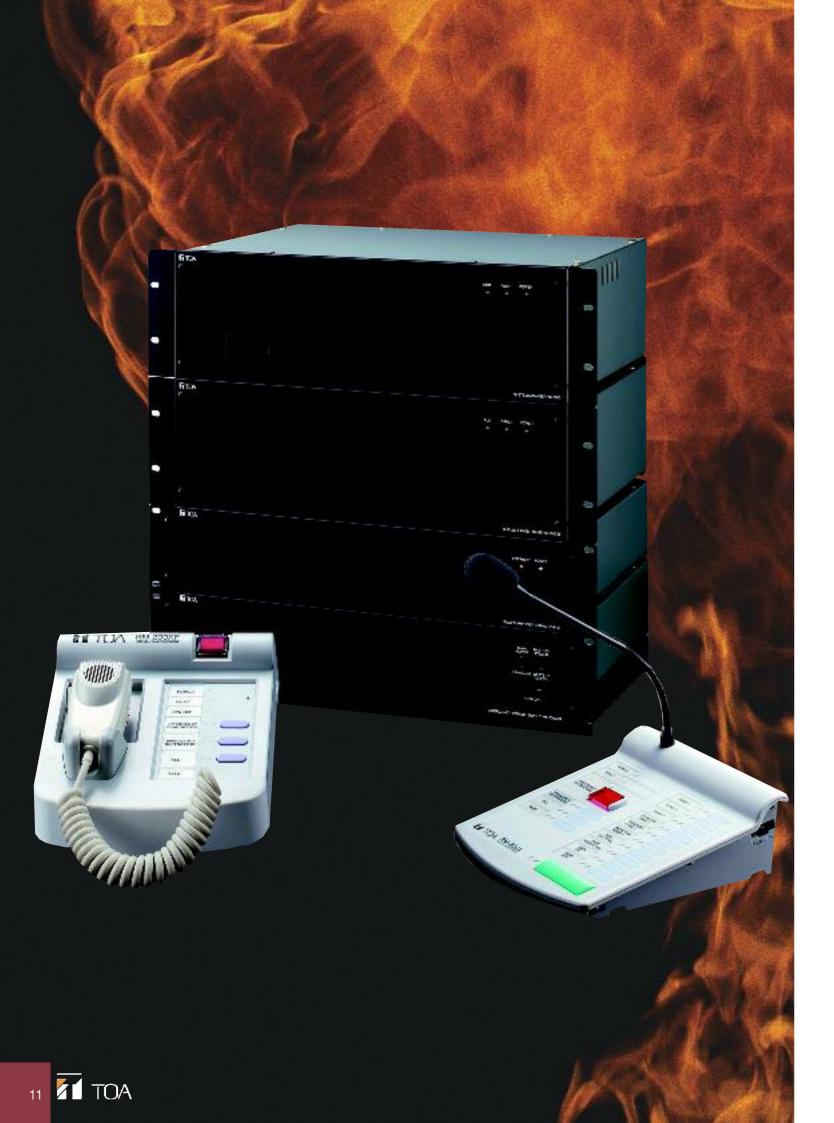
Specifications	RM-200M	RM-210
Power Requirement	24 V DC (Operating range: 14 – 28 V DC)	From RM-200X/M/XF
Current Consumption	100 mA maximum	20 mA max. (in terms of DC power inputs of RM-200X and RM-200XF)
Distortion	Under 1%	-
Frequency Response	100 – 20000 Hz	-
Signal-to-Noise Ratio	Over 60 dB	-
Audio Output	0 dBV, 600 Ohm, balanced	-
Microphone	Unidirectional electret condenser microphone	-
Speaker Control	Controllable by PC software	-
Voice Message Control	Activation of 5 messages	-
Key Extension	10 keys extension per RM-210, extension connector	10
Connection Cable and Connector	Category 5 STP cable, RJ45 connector	Connection to RM-200M, RM-200X or RM-200XF by way of dedicated cable
Finish	ABS resin, bluish grey	ABS resin, bluish grey (PANTONE 538 or its equivalent)
Dimensions (W x H x D)	190 × 76.5 × 215 mm (Gooseneck microphone excluded)	110 x 76.5 x 215 mm
Weight	750 g	350 g

VX-2000 Series
Audio Management System

VX-2000 - Description

The VX-2000 Series is a versatile broadcast and public address system that fulfills the requirements of EN60849/IEC60849 standard for general purpose and emergency broadcasts.

It is configured for simple as well as for complex installations.

The total system is composed of a System Manager, Surveillance Frame, Power Amplifiers, Power Supply, Emergency Power Supply, Fireman's Microphone and user-specified number of Remote Microphones.

The most important factor in an emergency system is total reliability.

The VX-2000 features include multiple failure detection measures that constantly check components and speaker lines for any faults or abnormalities which are informed via indicators and buzzers.

The VX-2000 features a scalable architecture that can be easily expanded as requirements dictate.

Its fully modular configuration facilitates assembling a system that is ideally optimized for a particular application with specific modules.

The VX-2000 offers a high-performance cost-effective solution to any environment's broadcast and public address requirements.

Features

- Full compliance with EN60849 standards
- System status can be confirmed on Remote Microphones
- Emergency Microphone is available
- Simultaneous dual-origin recorded message broadcasts
- Convenient multi-language software
- 1 per 100 second frequency program non-interruptive surveillance

Applications

- Public buildings for example schools, train stations, shopping malls or administrative buildings which need to fulfill the demanding requirements of emergency evacuation according to EN 60849 as well as standard PA requirements

Options

- EV-200M: Voice announcement board
- IT-450: Isolation transformer (audio link output)

EN54 UNDER TEST
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VX-2000 Series
System Manager

Features

- Input matrix unit that assigns input signals to 4 audio buses
- Functions as the VX-2000 system's manager
- Up to 8 units of the VX-200XI, VX-200XR, and 900 Series input modules can be mounted in the System Manager
- The VX-2000 can control audio signal routing, priorities, and peripheral equipment
- Input and output control settings are performed by way of a PC software
- Up to 2000 system events and failures can also be recorded, and the log can be viewed from a PC

Options

- VX-200XR: Remote Mic Input Module
- VX-200XI: Audio / Control Input Module
- 900 series plug-in modules: (M-01F, U-01F, U-01R, U-03R)

Specifications VX-2000

Power Source	24 V DC (operating range: 20 – 40V DC)
Current consumption	Under 650 mA (20 V DC)
Input	–20 dBV, unbalanced, number of module slots: 8
Audio Link Output	Number of audio buses: 4, 0 dBV, electronically balanced, RJ45 female connector
Monitor Output	0 dBV, electronically balanced, XLR receptacle (3 pins)
Frequency Response	20 – 20000 Hz
S/N Ratio	Over 60 dB
Distortion	Under 0.5 %
Cross Talk	Under –60 dB (1 kHz, 0 dB)
Control Input	16 inputs, RJ45 connector x 2
Control Output	16 outputs, RJ45 connector x 2
Chime Tone	Built-in chime: 4-tone chime (up)/4-tone chime (down)/2-tone chime/Gong
Communication System	PC (setting software to be installed): D-sub connector (9 pins), cross cable, RS-232C, VX-2000SF: RJ45 connector, twisted-pair straight cable (TIA/EIA-568A standard), LONWORKS RS-485
Operating Temperature	0° C to +40° C
Finish	Panel: Surface-treated steel plate, black, 30 % gloss, paint
Dimensions (W x H x D)	482 x 132.6 x 337 mm
Weight	6.4 kg

VX-2000 Series
Surveillance Frame

Features

- Surveillance Frame is the output matrix section of the VX-2000 system
- A total of 10 units of output modules and control modules can be installed
- Assigns audio signals to individual zones from 4 audio buses
- Extendable to up to 5 units
- Rack-mountable, 3 units height
- 1 standby amplifier per VX-2000SF
- In case of power amplifier failure, output is automatically switched to the standby amplifier
- Output volume setting with PC system software 6 types of modules can be used:
- The VX-200SP/200SP-2 Pilot Tone Detection module, the VX-200SZ/200SZ-2 Impedance
- Detection module, the VX-200SI Control Input module, and the VX-200SO Control Output module

Options

- Pilot Tone Detection Modules: VX-200SP-2, VX-200SP
- Impedance Detection Modules: VX-200SZ, VX-200SZ-2
- VX-200SI: Control Input Module
- VX-200SO: Control Output Module

Specifications VX-2000SF
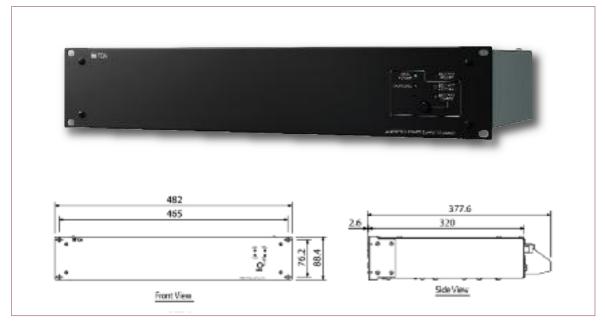
Power Source	24 V DC (operating range: 20 – 40V DC)
Current Consumption	Under 2 A (40V DC)
Number of Module Slot	10, usable modules: VX-200SZ, VX-200SZ-2, VX-200SP, VX-200SP-2, VX-200SI, VX-200SO
Frequency Response	20 Hz -20000 kHz (when use VX-200SZ: 120 Hz ... 20 kHz)
S/N Ratio	Over 60 dB
Distortion	Under 0.5 %
Cross Talk	Under -60 dB (1 kHz, 0 dBV)
Audio Link Input/Output	Number of audio buses: 4, 0 dBV, electronically balanced, RJ45 connector
Standby Amplifier Link	RJ45 female connector for connecting the VP-2064, VP-2122, VP-2241, VP-2421 Power Amplifier.
Communication System	VX-2000, VX-2000SF: RJ45 female connector x 2, LONWORKS RS-485 VX-2000DS: RJ45 connector x 2
Operating Temperature	0° C to +40° C
Finish	Panel: Surface-treated steel plate, black, 30% gloss, paint
Dimensions (W x H x D)	482 x 132.6 x 337 mm
Weight	5.6 kg
Accessory	Pre-installed rack mounting bracket (pre-installed on the unit), blank panel x 9, standby amp. cable (3m) x 1

VX-2000 VOICE EVACUATION SYSTEM

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VX-2000 Series
Emergency & Standard Power Supply

First fully EN 54 Certified Voice Alarm System

482
465
377.6
320
2.6
76.2
88.4

Front View
Side View

Features

▸ The VX-2000DS Emergency Power Supply Unit supplies the DC power to each component in the VX-2000 system by connecting the VX-2000PS Power Supply Unit. It keeps the battery unit that contains 2 × 12 V sealed lead batteries charged compensating for the temperature of the battery charging voltage.

▸ Automatically switch-over in case of AC mains failure
▸ EN 54-4 certified
Certificate No : 1134-CPD-083

Specifications VX-2000DS

Power Source	230 V AC, 50/60 Hz
Power Consumption	240 W max.
Applicable Battery	Panasonic LC-X1265PG / APG (65 Ah) (12V x 2 or 4)
Charging Method	Trickle charging
Charging Current	5 A max
Charging Output Voltage	27.3 V ±0.3 V (at 25°C) Temperature correction coefficient: –40 mV/°C
Power Supply Input	6 M4 screw terminal, distance between barriers: 11 mm
DC Power Output	6 (25 A max. each) M4 screw terminal, distance between barriers: 11 mm
Control Connector	RJ45 female connector for connecting the VX-2000SF. Twisted-pair straight cable (TIA/EIA-568A standard)
Type of control signal:	Battery check, AC power status, DC power status, charging circuit failure, and battery failure
Battery Connection	1 pair of positive and negative terminals, applicable cable diameter: AWG 6 – AWG 1/0
Operating Temperature	0°C to +40°C
Finish	Panel: Surface-treated steel plate, black, 30% gloss, paint
Dimensions (W x H x D)	482 x 88.4 x 377.6 mm
Weight	10.5 kg

VX-2000 Series
Power Supply

VX-2000PS

VX-2000PF
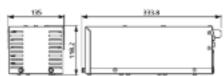
Features VX-2000PS

▸ Up to 3 VX-200PS Power Supply units (6 channls) can be mounted in one VX-2000PF Power Supply Frame
▸ 2 DC output channels per unit
▸ EN 54-4 Certified
Certificate No : 1134-CPD-083
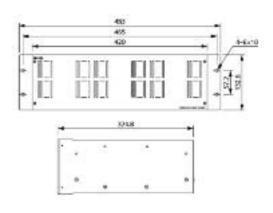
Features VX-2000PF

▸ VX-2000PF frame for rack mounting of up to
▸ 3 VX-200PS Power Supply Units
▸ EN54-4 Certified
Certificate No: 1134-CPD-083

135
333.8
118.2

483
465
420

Specifications

	VX-2000PS	VX-2000PF
Power Source		230 V AC, 50/60 Hz
Power Consumption	-	500 W
PS OUT	-	Rated output: 210 W (29 V, 7.25 A) x 2,
	-	Peak output: 400 W x 2, M4 screw terminal
Operating Temperature	-	0° to +40°C
Finish	Panel: Surface-treated steel plate, black, 30 % gloss, paint	Surface-treated steel plate
Dimensions (W x H x D)	483 x 132.6 x 324.8 mm	135 x 118.2 x 333.8 mm
Weight	5.5 kg	13.2 kg
Product Composition	Side panel x 2, Chassis x 1, Front panel x 1	Fuse (T3.15A L) x 1, Power cable x 1
Accessory	Rack mounting screw x 4, Fiber washer x 4	-
Usable Unit	VX-200PS (up to 3)	-

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VX-2000 Series
System Amplifier

VP-2000VX

VP-2000VX-BGM

VP-2064/VP-2122/VP-2241/VP-2421

Features

- 4 different power configurations:
  60 W x 4 Channels (VP-2064)
  120 W x 2 Channels (VP-2122)
  240 W x 1 Channel (VP-2241)
  420 W x 1 Channel (VP-2421)
- Usable as standby amplifier for emergency switchover
- Power Amplifier uses 1 VP-200VX Power Amplifier Input Module per channel
- Programmable power amplifier standby function maximizes battery-powered operation time

Options

- VP-200VX: Amplifier Input Module for transmission of status and audio signals between amplifier and control modules
- VP-200VX-BGM: Amplifier Input Module with additional input for BGM

VX-2000 Series
System Amplifier - Specification

Specifications	VP-2064	VP-2122
Type	Power Amplifier 4 x 60 W	Power Amplifier 2 x 120 W
Power Source	28 V DC (operating range: 20 .... 40 V DC) M4 screw terminal, distance between barriers: 12 mm	28 V DC (operating range: 20 .... 40 V DC) M4 screw terminal, distance between barriers: 12 mm
Current Consumption (EN60065)	4.8 A in total	4.8 A in total
Rated Output Power	4 x 60 W	4 x 120 W
Output Voltage/Impedance	100 V/167 Ohm, 70 V/83 Ohm, 50 V/41 Ohm (selectable by the internal wiring change)	100 V/83 Ohm, 70 V/41 Ohm, 50 V/21 Ohm (selectable by the internal wiring change)
Number of Channels	4	2
Input	Specified by input module VP-200VX	Specified by input module VP-200VX
Number of Module Slots	1, usable module: VP-200VX	1, usable module: VP-200VX
Output	Power amplifier output (speaker line): M3.5 screw terminal	Power amplifier output (speaker line): M3.5 screw terminal
Frequency Response	40 .... 16,000 Hz, ±3 dB (at 1/3 rated output)	40 .... 16,000 Hz, ±3 dB (at 1/3 rated output)
Distortion	Under 1% (at rated output, 1kHz)	Under 1% (at rated output, 1kHz)
S/N Ratio	Over 80 dB	Over 80 dB
Panel Indicator	Channel power indicator: 4 channels, dual colour LED Overheat indicator: Yellow LED	Channel power indicator: 4 channels, dual colour LED Overheat indicator: Yellow LED
Operating Temperature	0° ... +40°C	0° ... +40°C
Finish	Panel: Surface-treated steel plate, black, 30% gloss, paint	Panel: Surface-treated steel plate, black, 30% gloss, paint
Dimensions (W x H x D)	482 x 88.4 x 340.5 mm	482 x 88.4 x 340.5 mm
Weight	11.2 kg	9.1 kg
Accessory	Rack mounting screw x 4, Fiber washer x 4	Rack mounting screw x 4, Fiber washer x 4

Specifications	VP-2241	VP-2421
Type	Power Amplifier 120 W	Power Amplifier 420 W
Power Source	28 V DC (operating range: 20 .... 40 V DC) M4 screw terminal, distance between barriers: 12 mm	28 V DC (operating range: 20 .... 40 V DC) M4 screw terminal, distance between barriers: 12 mm
Current Consumption (EN60065)	4.8 A	7.6 A
Rated Output Power	1 x 240 W	1 x 420 W
Output Voltage/Impedance	100 V/41 Ohm, 70 V/21 Ohm, 50 V/10 Ohm (selectable by the internal wiring change)	100 V/24 Ohm, 70 V/12 Ohm, 50 V/6 Ohm (selectable by the internal wiring change)
Number of Channels	1, usable module: VP-200VX	1, usable module: VP-200VX
Input	Specified by input module VP-200VX	Specified by input module VP-200VX
Number of Module Slots	4, usable module: VP-200VX	2, usable module: VP-200VX
Output	Power amplifier output (speaker line): M3.5 screw terminal	Power amplifier output (speaker line): M3.5 screw terminal
Frequency Response	40 .... 16,000 Hz, ±3 dB (at 1/3 rated output)	40 .... 16,000 Hz, ±3 dB (at 1/3 rated output)
Distortion	Under 1% (at rated output, 1kHz)	Under 1% (at rated output, 1kHz)
S/N Ratio	Over 80 dB	Over 80 dB
Panel Indicator	Channel power indicator: 4 channels, dual colour LED Overheat indicator: Yellow LED	Channel power indicator: 4 channels, dual colour LED Overheat indicator: Yellow LED
Operating Temperature	0° ... +40°C	0° ... +40°C
Finish	Panel: Surface-treated steel plate, black, 30% gloss, paint	Panel: Surface-treated steel plate, black, 30% gloss, paint
Dimensions (W x H x D)	482 x 88.4 x 340.5 mm	482 x 88.4 x 340.5 mm
Weight	8.1 kg	9.5 kg
Accessory	Rack mounting screw x 4, Fiber washer x 4	Rack mounting screw x 4, Fiber washer x 4

VX-2000 Series
Emergency Remote Microphone

Alarm Switch

RM-200XF | Microphone | RM-210

Features

- Special microphone for fireman's use
- For emergency broadcast and general purpose broadcast applications
- Push-button zone selection
- PC-programmable system software allows assigning of functions to the individual keys (each with 2 LED)
- Per 1 RM-200XF up to 10 extensions of RM-210
- Up to 4 Emergency microphones per 1 system
- CPU-switch for emergency broadcast to all zones even in case of a CPU error
- Automatic failure detection of emergency keys and in the signal path (control and audio signals) between microphone (including microphone element) and system manager
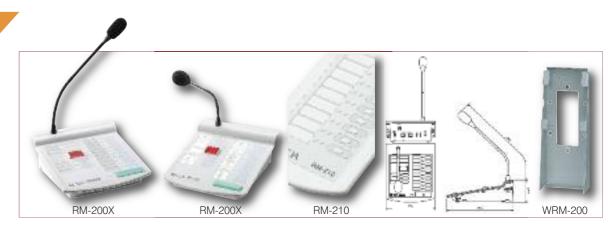
Options

- RM-210: Extension Unit
- WB-RM200: Wall-mounting bracket for

Specifications — RM-200XF

Power Source	24 V DC (operating range: 16 – 40 V DC)
Current Consumption	Under 200 mA (RM-200XF), 850 mA (with 10 RM-210s connected)
Audio Output	0 dBV, 600 Ohm, balanced
Hand-Held Microphone	Dynamic microphone, function switch (default: press-to-talk), microphone element fault detection
Frequency Response	200 – 15,000 Hz
S/N Ratio	Over 55 dB
Functions	Internal monitor speaker 200 mW/Volume control: microphone, monitor speaker
Number of Function Keys	5 (including hand-held microphone's switch), extendable up to 105 (with 10 RM-210s connected)
Key Extension	10 keys extension per RM-210, EXTENSION connector
Number of Connectable Units	4
Communication System	LONWORKS twisted pair free topology transceiver
Connection Cable and Connector	Category 5 STP cable, plug-in screw connector
Communication Distance	500 m (Free topology wiring)
Finish	ABS resin, bluish grey (PANTONE 538 or equivalent)
Dimensions (W x H x D)	200 x 215 x 82.5 mm (excluding the coiled cord)
Weight	1.2 kg

VX-2000 Series
Remote Microphone

RM-200X | RM-200X | RM-210 | WRM-200

Features

- RM-200X: System remote microphone
- For both emergency and general purpose broadcast
- Zone selection or all call
- PC-programmable system software permits desired functions to be assigned to individual function keys (equipped with 2 LED indicators)
- Up to 9 RM-210 Remote Microphone Extension units can be used with each RM-200X Remote Microphone
- Up to 8 in total of RM-200X and RM-200XF units can be connected within one system
- RM-210: Key extension unit
- 10 additional keys

Options
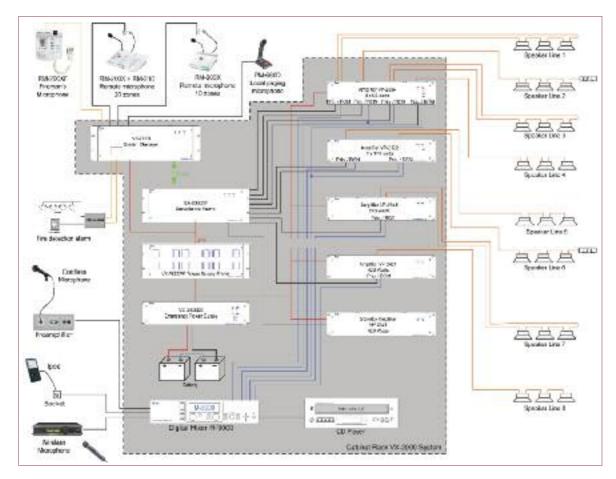
- WB-RM200: Wall mounting bracket for
- WH-4000A: Headset

Specifications

	RM-200X	RM-210
Power Source	24 V DC (operating range: 16 – 40 V DC), supplied from RJ45 connector or power input jack (non-polarity type)	From RM-200X/M/XF
Current Consumption	Under 200 mA (RM-200X), 750 mA (with 9 RM-210s connected)	20 mA max. (in terms of DC power inputs of RM200X and RM-200XF)
Audio Output	0 dBV, 600 Ohm, balanced, RJ45 connector	-
External Microphone Input	-40 dB, 2.2 kΩ, unbalanced, mini jack, phantom powering	-
Distortion	Under 1 %	-
Frequency Response	100 Hz ... 20 kHz	-
S/N Ratio	Over 60 dB	-
Internal Monitor Speaker	200 mW	-
Volume Control	Microphone volume control, Monitor speaker volume control	-
Number of Function Keys	15, extendable up to 105 (with 9 RM-210s connected, 10 keys each)	10
Number of Connectable Units	8 (including RM-200XF)	-
Communication	System: LONWORKS twisted pair free topology transceiver, Distance: max. 500 m (Free topology wiring)	-
Connection Cable and Connector	Category 5 STP cable, RJ45 connector	Connection to RM-200M, RM-200X or RM-200XF by way of dedicated cable
Finish	ABS resin, bluish grey (PANTONE 538 or its equivalent)	ABS resin, bluish grey (PANTONE 538 or its equivalent)
Dimensions (W x H x D)	190 x 76.5 x 215 mm (gooseneck microphone excluded)	110 x 76.5 x 215 mm
Weight	850 g	350 g

Automatic Dual Broadcasting

When activated by a remote microphone or fire detection system link, simultaneous dual broadcasting is possible by using 2 voice announcement cards to allow different messages* to be available at the same time such as alert and evacuation messages.
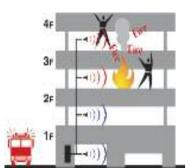

*A maximum of 4 broadcasts are simultaneously possible.

(2 EV-200M voice announcement boards installed in the VX-2000)

Red

In an emergency, the system automatically broadcasts one evacuation message to the buildings 3rd and 4th floors.

Blue

Along with the evacuation message, the system automatically broadcasts an alert message to the 1st and 2nd floors simultaneously.

VX-200XI (For VX-2000)   VX-200XR (For VX-2000)   VX-200SZ (For VX-2000)

External Equipment   Paging Station Connection   Impedance Monitoring

Features

- Audio Input Module with Control Input
- Control input terminals
- Low-cut and high-cut filters
- Gain controls
- Connects e.g. to paging microphone or other sound source equipment with both audio and control outputs
- Audio input sensitivity –70 dB or –20 dB by internal switch
- For input module slot of the VX-2000 frame

Features

- Remote Microphone Input Module for RM-200X Remote Microphone or RM-200XF Fireman's Microphone
- For VX-2000 frame's input module slot

Features

- Impedance Detection Module is an audio signal output module
- Speaker line impedance detection
- For VX-2000SF Surveillance Frame
- Detection of speaker line short circuits, open circuits by comparing impedance values, and ground fault

Specifications

	VX-200XI	VX-200XR	VX-200SZ	VX-200SZ-2 (s. next page)
Power Source	Supplied from VX-2000	Supplied from VX-2000	Supplied from VX-2000SF	Supplied from VX-2000SF
Current Consumption	Under 30 mA	Under 17 mA	Under 150 mA	Under 170 mA
Connectable Microphones	–	RM-200X and RM-200XF		
Input Sensitivity	MIC: –70 to –42.5 dBV LINE: –20 to +7.5 dBV MIC or LINE with selector switch	–		
Speaker Output			Plug-in screw connector	2 outputs (A, B), plug-in screw connector
Power Amplifier Input			Plug-in screw connector for connecting the VP-2064, VP-2122, VP-2241, VP-2421 power amplifier	
Fault Detection System			Short circuit, open circuit (impedance detection method), ground fault	
Control Input	No-voltage make contact, open voltage: 17 V DC, short circuit current: Under 5 mA	–		
Finish	Panel: Aluminium, hairline	Panel: Aluminium, hairline	Panel: Surface-treated steel plate	
Dimensions (W x H x D)	35 x 78 x 88 mm	35 x 78 x 88 mm	30.5 x 132.6 x 290.3 mm	
Weight	70 g	70 g	320 g	335 g
Applicable Model	VX-2000	VX-2000	VX-2000SF	VX-2000SF

VX-2000 Series Modules

VX-200SZ-2 (For VX-2000SF)   VX-200SP (For VX-2000SF)   VX-200SP-2 (For VX-2000SF)

Duel Curcuit Impedance Monitoring   Return Loop Monitoring   End of Line Monitoring

Features

- **Impedance Detection Module**
- **Similar to the VX-200SZ's features**
- **2 speaker outputs (A and B), broadcasts can be maintained even if 1 of the 2 outputs fails**
- **Failures indication by LED on the panel**

Features

- **Pilot Tone Detection Module**
- **Audio signal output module with speaker line pilot tone detection**
- **Detection of speaker line short circuits, open circuits by monitoring for the presence of a pilot signal, and ground fault**

Features

- **Consists of Pilot Tone Detection Module + End of Line Module**
- **Similar to the VX-200SP's features**
- **Connected to the end of the speaker line**
- **Eliminates the necessity of using the speaker line for line monitoring**
- **Shielded cable must be used for the speaker line**

Specifications

	VX-200SP	VX-200SP-2
Power Source	Supplied from VX-2000SF	Supplied from VX-2000SF
Current Consumption	Under 100 mA	Under 100 mA
Power Amplifier Link	RJ45 female connector for connecting the VP-2064, VP-2122, VP-2241,VP-2421Power Amplifier.	
Line Monitor	Plug-in screw connector	Plug-in screw connector
External Attenuator	Plug-in screw connector, relay, no-voltage make contact output	Plug-in screw connector, relay, no-voltage make contact output
Control Output	Transfer type, withstand voltage: 30 V DC, 250 V AC, contact current: Under 7A	Transfer type, withstand voltage: 30 V DC, 250 V AC, contact current: Under 7A
Speaker Output	Plug-in screw connector	Plug-in screw connector
Power Amplifier Input	Plug-in screw connector for connecting the VP-2064, VP-2122, VP-2241, VP-2421 Power Amplifier	
Fault Detection System	Short circuit, open circuit (pilot tone detection method), ground fault	Short circuit, open circuit (pilot tone detection method), ground fault
Finish	Panel: Surface-treated steel plate	Panel: Surface-treated steel plate
Dimensions (W x H x D)	30.5 x 132.6 x 290.3 mm	30.5 x 132.6 x 290.3 mm
Weight	240 g	235 g
Applicable Model	VX-2000SF	VX-2000SF
End Of Line Unit (Accessory)		Power supplied from the VX-200SP-2, speaker line connection: Plug-in connector, weight: 22 g

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VX-2000 Series Modules

VX-200SO (For VX-2000SF)   VX-200SI (For VX-2000SF)   VX-200SE (For VX-2000SF)

Features

- **Control Output Module**
- **Increases the number of control outputs in the VX-2000 system**
- **16 control outputs**
- **No-voltage 'make' contacts can be output to external equipment depending on the internal event**
- **Up to 128 control outputs per system**

Features

- **Control Input Module**
- **Increases the number of control inputs**
- **16 control inputs**
- **Receives a contact signal from connected external equipment and controls the system**
- **Up to 128 control inputs per system**

Features

- **Equalizer Card**
- **9-band, 1-channel equalizer**
- **To be mounted on the circuit board of the VX-200SP Pilot Tone Detection module VX-200SP-2 Pilot Tone Detection module VX-200SZ Impedance Detection module VX-200SZ-2 Impedance Detection module**
- **Settings are performed by using the PC system software**

Specifications

	VX-200SO	VX-200SI	VX-200SE
Power Source	Supplied from VX-2000SF	Supplied from VX-2000SF	Supplied from VX-200SZ, VX-200SP
Current Consumption	Under 150 mA	Under 100 mA	Under 50 mA
Equalizer Centre Frequency	–	–	80 Hz, 125 Hz, 250 Hz, 500 Hz, 1 kHz, 2 kHz, 4 kHz, 8 kHz, 12 kHz
Gain Range	–	–	±12 dB, adjustable in 2 dB steps
Control Output	16 outputs, no-voltage make contact contact capacity: 28 V DC, 1A, RJ45 connector	16 inputs, no-voltage make contact, open voltage:24 V DC, short circuit current: under 10mA, RJ45 connector,	
Finish	Panel: Surface-treated steel plate	Panel: Surface-treated steel plate	
Dimensions (W x H x D)	30.5 x 132.6 x 290.3 mm	30.5 x 132.6 x 290.3 mm	110 x 90 x 21.4 mm
Weight	250 g	200 g	50 g
Applicable Model	VX-2000SF	VX-2000SF	VX-200SZ, VX-200SP

VX-2000 Series Modules

VP-200VX (For VP-2000 Amps)/VP-200VX-   EV-200M (For VX-2000)

Features

- **Power Amplifier Input Module**
- **For transmission of status and audio signal between amplifier and control module**
- **To be built into the VP-2064, VP-2122, VP-2241 or VP-2421 power amplifier**
- **VP-200VX-BGM features additional BGM input plus muting**

Features

- **Sound Repeater Module**
- **Up to 7 messages, 5 general messages/music, 1 alert and 1 evacuation (in compressed format it will allow 20 minutes) plus of message duration and can be recorded and played back**
- **Includes compact memory flash card**

Specifications	VP-200VX (For VP-200 Amps)	EV-200M (For VX-2000)
Power Source	Supplied from VP-2064, VP-2122, VP-2241 or VP-2421	24 V DC, 0.2 A
Power Consumption	Under 30 mA	5 W
Output		0 dBV
Frequency Response		20 Hz ... 20 kHz (44.1 kHz sampling)
Power Amplifier Link	RJ45 connector for connecting the VX-200SP or VX-200SZ audio output module	
Distortion		Under 0.3% (44.1 kHz, recording method: Extremely high)
Playback Mode		Single source playback
No. of Playback Program		8 programs
Operating Temperature		0°C to +50°C
Finish	Panel: Surface-treated steel plate	
Dimensions (W x H x D)	88 x 25.8 x 73.2 mm	120 x 18.6 x 121 mm
Weight	50 g	110 g

VX-2000 Series Modules

M-01   U-03R

Features

- **Microphone input module**
- **Phantom power**
- **Balanced, low impedance**
- **Filter: High pass, low pass**
- **Connector:M-01F : XLR**

Features

- **U-03R Module Input (RCA connector)**
- **U-01F Module Aux input (XLR connector)**
- **U-01S Module Input (Phoenix connector**

Specifications	M-01	U-03R
Input Impedance	200 Ohm, balanced	
Current Consumption	9 mA	Under 8 mA
Sensitivity	-60 dBv	100 - 3,600 mV (adjustable)
Frequency range	25 Hz ... 20 kHz	20 Hz - 20 kHz
Finish	Front: Steel plate	Front: Steel plate
Dimensions (W x H x D)	35 x 78 x 88 mm	35 × 78 × 88 mm
Weight	110 g	50g
Applicable Model	VX-2000	VX-2000

SX-2000 Series
Network Enabled for Extended System Installations

SX-2000 - Description

The SX-2000 is a new scalable system for configuring versatile and highly effective PA systems. The system features new matrixing capabilities, so that a single system can have its components distributed in different locations under centralized control. Ideal for large scale installations ranging from multiple buildings to local systems, the versatile SX-2000 Series is particularly suitable for using in airports and railway stations, factories, shopping malls and large offices. The system's versatility such as dual power source and redundancy for fail-safe operation makes it a reliable solution for any specific installation without long lead times and the expense of custom systems.

SX-2000 System Configuration

The basic system comprises one SX-2100AI Audio Input Unit, one SX-2000AO or SX-2100 Audio Output Unit and the SX-2000SM System Manager. It enables from 2 inputs/8 outputs right up to 64 inputs and 256 outputs, with further expansion to 1,416 control inputs/outputs if needed. The SX-2000 Series makes it simple to control an expanded system by use of networking with commercial switching hub and cables, IP Intercom Network audio adaptor(s) can also be used. It features functions such as feedback suppressor, compressor/ auto-leveler, equalizer/filters, and auto mixing (with feedback ducker) to ensure high sound quality. The SX-2100AI modular construction simplifies system configuration as only plug-in modules have to be used. Therefore it allows flexibility of use with a wide range of input devices such as CD player, FM etc. to suit a particular application.

Fail-Safe Operation

The system is featuring a self-diagnosis to continuously monitor the status as well as speaker lines and connections. It generates alerts and email notifications to the system administrator along with a failure log. Power failure protection is given by two power supply channels plus a battery back-up keeps the system operational without requiring an UPS. An additional analog backup line from the microphone to the amplifier allows simultaneous broadcasting even during a breakdown of the system's digital functions. The SX-2000 system can be password-protected and key locked at external devices.

Operational Simplicity and Low Maintenance

Control over the entire system is software-driven. Operation tasks are performed easily through menu and function buttons assisted by an LCD and status LEDs. Operation and maintenance tasks are easier compared to conventional systems with parameter settings saved to a compact flash card.

EN54 UNDER TEST
16

SX-2000 Series
System Management

Features

- Matrix system in combination with an audio input unit, audio output unit, and remote microphone
- Audio signal routing and priority control
- 8 control inputs, 8 control outputs
- Failure status outputs, failure data inputs/switches
- Access indicators, mode indicators and failure indicators enabling a wide range of controls and status monitoring
- Control can be performed by way of a CF card inserted into the SX-2000SM unit
- Operations can be recorded and their contents stored on a CF card as an operation log
- Two power inputs for creation of a dual-redundant power system

- Automatic voice announcement for emergency purpose available
- System settings via Dual LAN connection

Options

- SX-2000AO Audio Output Unit
- SX-2100AI Audio Input Unit
- SX-2100AO Audio Output Unit

Specifications SX-2000SM

Power Source	24 V DC; 2 power inputs
Current Consumption	Under 0.8 A
SX Link Network I/F	2 100BASE-TX circuits
Matrix System Specification	Bus: 16; audio input: Max. 64 ch, audio output: Max. 256 zones.
	Contact input: Max. 1,416, contact output: Max. 1,416.
	Priority control: 256 steps. Event log: Max. 10,000 events
Matrix System Configuration	Connectable SX-2100AI No.: Max. 8 units. Connectable SX-2100AO No.: Max. 32 units.
	Connectable RM-200S No.: Max. 64 units (up to 4 RM-200S per SX-2000AI)
	Connection cable / device shielded category 5 twisted pair cable for LAN (CAT5-STP)
LAN	Network I/F 1 10 BASE-T/100 BASE-TX circuit. Network Protocol TCP/IP. Connection Cable Shielded
	Category 5 twisted pair cable for LAN (CAT5-STP)
Analog Link	Input/output connector output: 2.
	Connection cable shielded category 5 twisted pair cable for LAN (CAT5-STP)
Failure Data	3 inputs (ACK/RESET/LAMP TEST) and 4 outputs (CPU FAULT/GENERAL FAULT/CPU OFF/BUZZER)
Memory Card	Insertion slot: 1 (supplied CF card (128MB))
Control	8 Control outputs, 8 control inputs
Finish	Panel: Aluminium, black, alumite, case: Surface-treated steel plate
Dimensions (W x H x D)	482 x 44 x 333 mm
Weight	3.8 kg

SX-2000 Series
Audio Input Unit

Features

- Modular audio input
- 2 to 8 inputs per unit
- Multiple units can be decentralized in a whole system
- Audio signals are transmitted digitally to the audio output unit
- Analog audio output function (1 channel) enables simultaneous all-zone calls for use in emergency situations
- Audio input levels (post-fader levels) are indicated on the level meters provided for each input channel

- Volumes can be adjusted for each channel using the volume controls on the front panel or the SX-2000 software

- Volume controls can be locked using the SX-2000 software
- Input channels can be monitored using the internal speaker
- 2 power inputs for redundant power system to support a dual-redundant power supply system

Options

- SX-200RM: Remote Microphone Interface Module
- RM-200SF: Remote Microphone
- RM-200SA: Remote Microphone
- RM-210: Extension Unit
- D-921E: Mic/Line Input Module
- D-921F: Mic/Line Input Module
- D-922E: Mic/Line Input Module
- D-922F: Mic/Line Input Module
- D-936R: Stereo Select Input Module

Specifications VX-2100AI

Power Source		24 V DC (2 independant power inputs)
Current Consumption		Under 1.5 A
Audio Intput		8 inputs, for up to 4 modules
Audio Input Characteristics		Sampling frequency: 48 kHz
Analog Link		
	Input / Output Connector	1 input, 1 output,
	Connection Cable / Device	CAT5-STP, max. cable length 800m, 2 x RJ45 connector
SX Link Network I/F		2 x 100 Base TX
	Connection Cable / Device	CAT5-STP, maximum cable length 100m to hub
Operating Temperature		0° C to +40° C
Finish		Panel: Aluminium, black, alumite, case: Surface-treated steel plate
Dimensions (W x H x D)		482 x 88.4 x 349 mm
Weight		7 kg

SX-2000 VOICE EVACUATION SYSTEM

RM-200SA / RM-210

RM-200SF

RM-200SA
Remote Microphone

The RM-200SA is a remote microphone designed for TOA's Matrix System. It is equipped with: 13 function switches (which can be programmed to select individual zones or zone groups), a covered switch, and corresponding indicators.

RM-210
Remote Microphone Extension

The RM-210 is an extension unit for increasing the number of function keys of RM-200S, Remote Microphones.

RM-200SF
RM-200SF is a Fireman's Microphone of the matrix system. It is equipped with an Emergency key, permitting it to be used as a remote microphone for emergency broadcast.

SX-2100AI (rear)

SX-200RM
Remote Microphone Interface Module

The SX-200RM is a dedicated remote microphone module for the SX-2000 Series audio input unit and can be used to connect two remote microphones. Input sensitivity can be adjusted.

D-921E
Mic/Line Input Module
(24 bits monaural type)

The D-921E is a dedicated 2-channel microphone/line input module designed for use with the SX-2100AI and equipped with removable terminal block type connectors.

D-921F
Mic/Line Input Module
(24 bits monaural type)

The D-921F is a dedicated 2-channel microphone/line input module designed for use with the SX-2100AI and equipped with XLR connectors.

D-922E
Mic/Line Input Module
(20 bits monaural type)

The D-922E is a dedicated 2-channel microphone/line input module designed for use with the SX-2100AI and equipped with removable terminal block type connectors.

D-922F
Mic/Line Input Module
(20 bits monaural type)

The D-922F is a dedicated 2-channel microphone/line input module designed for use with the SX-2100AI and equipped with XLR connectors.

D-936R
Stereo Select Input Module

The D-936R is a dedicated 4 stereo input module designed for use with the SX-2000AI and equipped with standard RCA pin jacks.

TOA

SX-2000 Series
Audio Output Unit SX-2000AO

SX-2000AO

Features

- Audio output unit
- Units can be operated in a decentralized system
- 8 audio outputs and 2 inputs, can be mixed
- 8 control inputs and 8 control outputs
- Receives audio signals from the audio input unit via digital transmission
- Analog audio input function (1 channel) enables simultaneous all-zone calls for use in emergency situations
- Audio output levels (post-fader levels) indicated on the level meters separate for each output channel
- Volumes adjustable for each channel by front volume controls or the SX-2000 software
- The volume controls can be locked by SX-2000 software
- Any output channel can be monitored using the internal speaker

- Emergency audio input and 24V emergecy cut-off input
- 2 power inputs for dual-redundant power supply system
- Automatic control of stand-by amplifier

Options

- DA-250DH Digital 2 Channel Amplifier
- DA-250FH Digital 4 Channel Amplifier
- DA-550FH Digital 4 Channel Amplifier
- VX-2000DS: Emergency Power Supply
- VX-200PS: Power Supply Unit
- VX-2000PF: Power Supply Frame

Specifications SX-2000AO

Power Source	24 V DC (operating range: 20 – 40V DC from VX-200PS)
Current Consumption	Under 0.79 A
Audio Output	8 outputs, 0 dB, load: 600 Ohm or more
Audio Output Characteristics	Frequency Response: 20 Hz ... 20 kHz , sampling frequency 48 kHz, D/A converter 24 bit
Control Input / Control Output	8 inputs / 8 outputs, removable terminal blocks (6 pins)
Emergency Line Input	Emergency signals switched and sent to input 1 (H,C,E) by relay, removable terminal blocks (3 pins)
Emergency-Cutoff 24 V Input	1 input, input current < 5 mA, removable terminal block (2 pins)
Analog Link	1 input, 1 output, connection cable CAT5-STP, max. cable length 800m, 2 x RJ45 connector
SX Link	2 x 100 Base TX with RJ 45 connector. Connection cable CAT5-STP, maximum cable length of 100m to hub
Operating Temperature	0° C to +40° C
Finish	Panel: Aluminium, black, alumite, case: Surface-treated steel plate
Dimensions (W x H x D)	482 x 88.4 x 349 mm
Weight	6.2 kg

SX-2000 Series
Audio Output Unit SX-2100AO

SX-2100AO

Features

- Multiple units can be decentralised in a system
- 8 audio outputs
- 8 control inputs and 8 control outputs
- 1 SX-2000CI Control Input Unit and 1 SX-2000CO Control Output Unit each can be cascaded
- 2 local audio inputs with control inputs are provided for the audio inputs
- Emergency switchover to a standby amplifier
- Analog transmission path (1 channel) enables all-zone calls for use in emergency situations
- 2 channels of link connection terminals for connecting to two VX-2000DS
- 2 inputs can be mixed and output.
- 2 power inputs for redundant power supply

- Level meters for each output channel allow monitoring of audio output levels
- Output volumes adjustable on the front panel
- Any output channel can be monitored using the internal speaker
- Key lock function

Options

- VP-2064: 60 W by 4 channels amplifier
- VP-2122: 120 W by 2 channels amplifier
- VP-2241: 240 W by 1 channel amplifier
- VP-2421: 420 W by 1 channel amplifier
- VX-2000DS: Emergency Power Supply
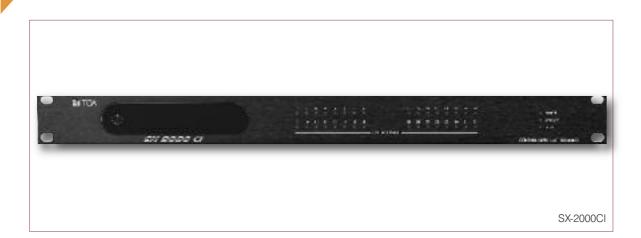- VX-200PS: Power Supply Unit
- VX-2000PF: Power Supply Frame

Specifications SX-2100AO

Power Source	24 V DC (2 power inputs)
Current Consumption	Under 1.2 A
Audio Output	8 outputs, 0 dB, load: 600 Ohm or more
Audio Output Characteristics	Frequency Response: 20 Hz ... 20 kHz , sampling frequency 48 kHz, D/A converter 24 bit
CI/CO Link	SX-2000CI / SX-2000CO: 1 interface, connection cable CAT5-STP, RJ45 connector
Local Audio Input	2 audio inputs, 0 dB, 10 kOhm, electronically balanced, RJ45 connector
	Frequency Response: 20 Hz ... 20 kHz , sampling frequency 48 kHz, D/A converter 24 bit 2 Control inputs
	Connection cable CAT5-STP,
DS Link	VX-2000DS: 2 interfaces, connection cable CAT5-STP, RJ45 connector
Analog Link	1 input, 1 output, connection cable CAT5-STP, RJ45 connector
SX Link	2 x 100 Base TX with RJ 45 connector. Connection cable CAT5-STP
Operating Temperature	0° C to +40° C
Finish	Panel: Aluminium, black, alumite, case: Surface-treated steel plate
Dimensions (W x H x D)	482 x 88.4 x 349 mm
Weight	7.1 kg

SX-2000 Series
Control Intput Unit SX-2000CI

SX-2000CI

Features

▸ Decentralised installation possible
▸ 32 control inputs
▸ Control input line failure detection
▸ Front panel LED for monitoring the line status
▸ Supply of stabilized 24 V DC
▸ 2 independent power inputs
▸ RJ45 connectors

Options

▸ SX-2100AO Audio Output Unit
▸ SX-2000AO Audio Output Unit

Applications

▸ Airports, Exhibiton Centres,
  Event Centres, Hotels

Specifications SX-2000CI

Power Source	24 V DC, 2 independant Inputs
Current Consumption	Under 0.55 A (when operated on 24 V DC)
Control Inputs	32 inputs
CI/CO Link	Input: 1 input, output: 1 output, input/output connector : RJ45 connector
	Connection cable: Shielded category 5 twisted pair cable (CAT5-STP)
Maximum Cable Distance	800 m
Finish	Panel: Aluminium black, alumite, Case: Steel plate
Dimensions (W x H x D)	482 x 44 x 331.5 mm
Weight	3.6 kg

SX-2000 Series
Control Output Unit SX-2000CO

SX-2000CO

Features

▸ Decentralised installation possible
▸ 32 control outputs
▸ Control input line failure detection
▸ Front panel LED for monitoring the line status
▸ Supply of stabilized 24 V DC
▸ 2 independent power inputs
▸ RJ45 connectors

Options

▸ SX-2100AO Audio Output Unit

Applications

▸ Airports, Exhibiton Centres,
  Event Centres, Hotels

Specifications SX-2000CO

Power Source	24 V DC, 2 independant Inputs
Current Consumption	Under 0.29A (when operated on 24V DC)
Control Outputs	32 outputs
CI/CO Link	Input: 1 input, output: 1 output, input/output connector : RJ45 connector
	Connection cable: Shielded category 5 twisted pair cable (CAT5-STP)
Maximum Cable Distance	800 m
Finish	Panel: Aluminium black, alumite, Case: Steel plate
Dimensions (W x H x D)	482 x 44 x 331.5 mm
Weight	3.6 kg

SX-200RM

Features

▼ Module for mounting in the SX-2100AI
▼ 2 inputs
▼ RJ45 connectors
▼ Input sensitivity separately adjustable
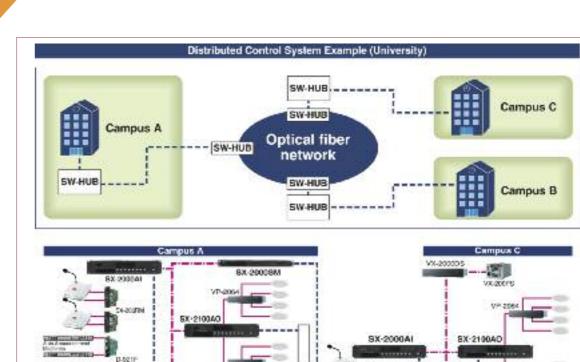
Options
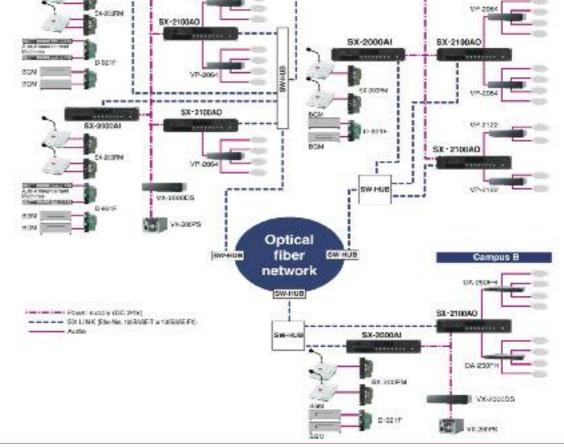
▼ SX-2100 AI: Audio Input Unit

Specifications SX-200RM

Power Source	Supplied from SX-2000AI
Input	Monaural x 2,
	-10 dB (0 dB=0.775V), 10 Ohm, RCA pin jack
A/D Converter	24 bits
Frequency Response	20 - 20 000 Hz, ± 1dB (+4 dB input, 0 dB=0.775V)
Sampling Frequency	48 kHz
Dynamic Range	> 100 dB (IHF-A weighted)
Total Harmonic Distorsion	< 0.05 % (+4 dB input, 0 dB=0.775V)
Finish	Panel: Pre-coated steel plate, black, 30% gloss
Dimensions (W x H x D)	35 x 119.5 x 178.4 mm
Weight	180 g
Applicable Model	SX-2100AI

Distributed Control System Example (University)

SX-2000 VOICE EVACUATION SYSTEM

SX-2000 Series
Emergency Remote Microphone

Alarm Switch

RM-200SF/RM-210   Microphone   RM-210

Features

- **Exclusively for emergency broadcasts made by firemen to evacuate**
- **For activation of emergency mode, start and stop automatic broadcasts of emergency announcements, reset emergency signals, and live microphone announcements**
- **CPU OFF switch allows all-zone calls (simultaneous attenuator-free global calls).**
- **No general broadcasts can be made.**

- **RM-210: Key extension unit**
- **10 additional keys**

Specifications RM-200SF

Power Requirement	24 V DC (Operating range: 14 – 28 V DC)
Current Consumption	100 mA (up to 550 mA with 3x RM-320F)
Distortion	Under 1%
Frequency Response	200 – 15,000 Hz
Signal-to-Noise Ratio	Over 55 dB
Audio Output	0 dBV, 600 Ohm, balanced
Microphone	Unidirectional dynamic microphone AGC
Volume Control	Microphone, buzzer
Operation key	Emergency key, Evacuate key, Alert key, Emergency reset key, CPU switch, Reset switch
Key Extension	10 keys extension per RM-210, extension connector
Connection Cable	Shielded CPEF cable or Category 5 STP cable, M3 screw terminal
Finish	ABS resin, bluish gray
Dimensions (W x H x D)	200 × 215 × 95 mm
Weight	1.48 kg

SX-2000 Series
Remote Microphone

RM-200SA/RM-210   RM-210   WR-RM-200

Features

- **Elegant design**
- **13 function switches**
- **Zone, group, all-call paging, and starting pre-recorded messages**
- **Emergency sequence can be started with the alarm button which is covered by a hinged lid**
- **Indication of system failure, line failure, busy zones etc.**
- **Extraordinary clarity and freedom from distortion by built-in compression circuit**

- **Up to 64 remote microphones can be connnected**
- **Covered switch prevents against accidental use**
- **RM-210: Allows extended zone selection**
- **Colour: Bluish grey**

Options

- **WH-4000A: Headset**
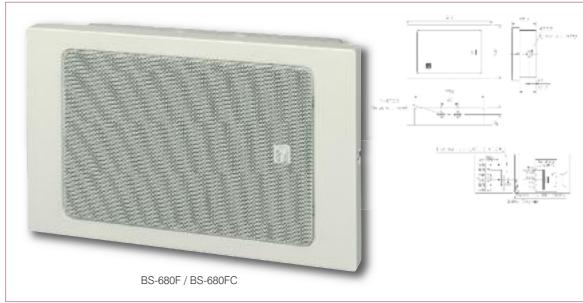- **WB-RM200: Wall mounting bracket**

Specifications

	RM-200SA	RM-210
Power Requirement	24 V DC (Operating range: 15 – 40 V DC)	From RM-200X/M/XF
Current Consumption	290 mA maximum	20 mA max. (in terms of DC power inputs of RM-200X and RM-200XF)
Distortion	Under 1%	-
Frequency Response	100 – 20,000 Hz	-
Signal-to-Noise Ratio	Over 60 dB	-
Audio Output	0 dBV, 600 Ohm, balanced	-
Microphone	Uni directional electret condenser microphone	-
Volume Control	Microphone, buzzer, monitor speaker	-
Emergency Broadcast	Activation of emergency broadcast (pre-recorded announcement or live microphone announcement) by emergency broadcast switch	-
Voice Message Control	Activation of 5 messages	-
Key Extension	10 keys extension per RM-210, extension connector	10
Connection Cable and Connector	Category 5 STP cable, RJ45 connector	Connection to RM-200M, RM-200X or RM-200XF by way of dedicated cable
Finish	ABS resin, bluish grey	ABS resin, bluish grey (PANTONE 538 or its equivalent)
Dimensions (W x H x D)	190 × 76.5 × 215 mm (Gooseneck microphone excluded)	110 x 76.5 x 215 mm
Weight	880 g	350 g

Wall Mounted Ceiling Speakers BS-680F/680FC
Metal Cabinet Speaker

EN54 24

Certificate No : 1438/CPD/0178

BS-680F / BS-680FC

Features

- **Surface or flush-mounting**
- **9 W continuous program**
- **High sound quality through 16 cm double cone speaker**
- **High sound pressure level**
- **Colour: off-white (RAL 9010 or equivalent)**
- **BS-680FC is EN 54-24 certified and is therefore legalised for use in conjunction with fire detection systems.**
  Certificate No : 1438/CPD/0178
  Certified Body : CNBOP-1438

- **Bridge wiring possible**
- **Two ceramic screw terminal blocks and thermal fuse (BS-680FC)**
- **In compliance with BS 5839 part 8 (BS-680FC)**
- **Enclosure metal, punched net grille**
- **Mounting bracket: Zinc coated steel plate with stainless steel bolts**
- **For 100 V / 70 V Systems**

Applications

- **Voice Evacuation System**

Specifications	BS-680F	BS-680FC
Speaker Element	16 cm double cone type	16 cm double cone type
Rated Input	6 W	6 W
Tappings 100 V	6 W / 3 W / 1.5 W / 0.8 W	6 W / 3 W / 1.5 W / 0.8 W
Tappings 70 V	3 W / 1.5 W / 0.8 W / 0.4 W	3 W / 1.5 W / 0.8 W / 0.4 W
Frequency Response	150 Hz ... 20 kHz	150 Hz ... 20 kHz
SPL (1 W, 1 m)	94 dB	94 dB
Connector	Push-in connector (bridging terminal)	Screw terminal (ceramic) bridging available
Dimensions (W x H x D)	310 x 190 x 87.2 mm	310 x 190 x 87.2 mm
Weight	3 kg	3 kg
Other Features	–	BS 5839-8 equivalent and EN 54-24 certified

TOA

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EN54 24

Certificate No : 1438/CPD/0178

Rim & Grille

Rim & Grille

PC-1867F / PC1867FC

Wiring Diagram

Features

▸ **Ceiling speakers**
▸ **9 W (continuous program)**
▸ **Fire dome made of steel**
▸ **Easy installation with spring catches**
▸ **Baffle, frame, net: aluminium steel**
▸ **Colour: off-white (RAL 9010)**
▸ **PC-1867FC is EN 54-24 certified and is therefore legalised for use in conjunction with fire detection systems.**
  Certificate No : 1438/CPD/0183
  Certified Body : CNBOP-1438
▸ **12 cm speaker**

▸ **For mounting in 156 mm holes**
▸ **PC-1867F: screw terminals**
▸ **PC-1867FC: ceramic screw terminal block (in compliance with British Standard BS5839 Part 8)**
▸ **Fire resistant baffle and rim, plus aluminium net**

Applications

▸ **Especially for environments with demanding safety requirements of fire protection in public buildings like train terminal, supermarket, office building, hotel and fitness center**

Specifications	PC-1867F	PC-1867FC
Dynamic Cone Driver	12 cm	12 cm
Rated Input	6 W	6 W
Continuous Program	9 W	9 W
Tappings 100 V	6 W / 3 W / 1.5 W / 0.8 W	6 W / 3 W / 1.5 W / 0.8 W
Tappings 70 V	3 W / 1.5 W / 0.8 W / 0.4 W	3 W / 1.5 W / 0.8 W / 0.4 W
Frequency Response	100 Hz ...16 kHz	100 Hz ...16 kHz
SPL (1W, 1m)	90 dB	90 dB
SPL at Rated Input (1 m)	98 dB	98 dB
Dimension of Baffle	ø 180 mm	ø 180 mm
Mounting Depth	110 mm	110 mm
Ceiling Hole Diameter	156 mm	156 mm
Weight	1300 g	1300 g

F-Series Wide Dispersion Flush Mounted Ceiling Speakers

TOA introduces a new range of ceiling-mounted speakers that have been designed and engineered to overcome some of the limiting factors that have been associated with conventional ceiling-mount speakers. Most noticeable has always been the high-frequency roll off that resulted from limited speaker dispersion characteristics. TOA's new ceiling speaker range provides well-balanced audio reproduction without treble attenuation over an expanded listening area thanks to the extra-wide dispersion characteristics that are part of the overall speaker design.

Perceived speaker directionality and beaming tendencies are minimized, resulting in a natural, well-balanced sound over a wide area at all levels. Conventional speakers exhibit high frequency roll off characteristics as the distance between speaker and listener increases. An ideal ceiling-mounted speaker's response characteristics should include wide dispersion and non-frequency dependent directionality and this ceiling speaker series proves that.

Conventional Speaker

Wide Dispersion
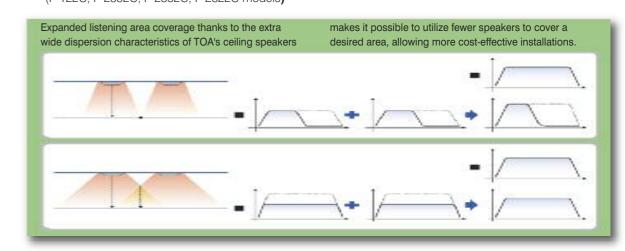
System Features

▸ **Designed to blend into ceilings with a smooth, low-profile design**
▸ **Extra ease of use and higher cost effectiveness with the metal "back can" enclosure for the speaker**
  (F-122C, F-2352C, F-2852C, F-2322C models**)**
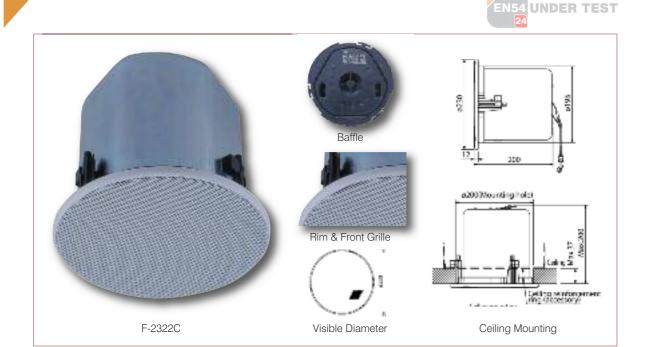
▸ **Minimal high frequency roll off allows clear and well-balanced sound reproduction over a wide listening area**

Expanded listening area coverage thanks to the extra wide dispersion characteristics of TOA's ceiling speakers makes it possible to utilize fewer speakers to cover a desired area, allowing more cost-effective installations.

HIGH PERFORMANCE LOUDSPEAKERS

EN54 UNDER TEST
24

Baffle

Rim & Front Grille

F-2322C   Visible Diameter   Ceiling Mounting

Features

- **Compact bass reflex ceiling speaker**
- **Flat front panel**
- **Wide frequency response**
- **High power**
- **Quick and easy installation**
- **Front grille: white (RAL 9010)**
- **Steel plate back can**
  Fire resistant baffle and rim according to UL94 V-0, plus steel punched net

- **Overload protection**
- **For 8, 16 Ohm impedance and for**
- **100 V/70 V line systems**

Options

- **HY-AH1: Anchor Hanging Bracket**
- **HY-BC1: Back Can**
- **HY-TB1: Tile Bar Bridge**
- **HY-TR1: Trim Ring**
- **BS-5839 part 8 available as an option**

Specifications   F-2322C

System	12 cm Cone Driver, Bass-Reflex
Power Handling Capacity	120 W (8 Ohm)
Rated Input Power	30 W (High Impedance, 16 Ohm)
Tappings 100 V	30 W / 10 W / 3 W / 1 W
Tappings 70 V	30 W / 15 W / 5 W / 1.5 W / 0.5 W
Frequency Response	70 Hz…20 kHz (-10 dB)
SPL (1 W / 1 m)	90 dB
SPL at Rated Input (1 m)	105 dB
Dimensions of Baffle	Ø 230 mm
Mounting Depth	max. 200 mm
Ceiling Hole Diameter	200 mm
Weight	3.7 kg

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Baffle

Rim & Front Grille

F-2352C   Visible Diameter   Ceiling Mounting

Features

- **2-way hi-fi speaker**
- **60 W high power output**
- **Diffuser with wide dispersion angle for high quality sound over a wide area**
- **Less speakers required than in a conventional speaker arrangement**
- **Colour: white (RAL 9010)**
- **Steel plate back can**

- **Fire resistant baffle and rim according to UL94 V-0, plus steel punched net**
- **8 or 16 Ohm impedance or 100 V line**

Options

- **HY-AH1: Anchor Hanging Bracket**
- **HY-BC1: Back Can**
- **HY-TB1: Tile Bar Bridge**
- **HY-TR1: Trim Ring**
- **BS-5839 part 8 available as an option**

Specifications   F-2352C

System	2-Way, 12 cm Cone Driver, Bass-Reflex
Power Handling Capacity	120 W (8 Ohm)
Rated Input Power	30 W (High Impedance, 16 Ohm)
Tappings 100 V	30 W / 10 W / 3 W / 1 W
Tappings 70 V	30 W / 15 W / 5 W / 1.5 W / 0.5 W
Frequency Response	70 Hz…20 kHz (-10 dB)
SPL (1 W / 1 m)	90 dB
SPL at Rated Input (1 m)	105 dB
Dimensions of Baffle	Ø 230 mm
Mounting Depth	max. 200 mm
Ceiling Hole Diameter	200 mm
Weight	3.7 kg

HIGH PERFORMANCE LOUDSPEAKERS

F-Series - F2852C
High Power 2 Way Wide Dispersion Ceiling Speaker (60W)

EN54 24 UNDER TEST

Baffle

Rim & Front Grille

F-2852C

Visible Diameter

Ceiling Mounting

Features

- **2-way Speaker**
- **For high power (60 W) Application**
- **Locations with higher ceilings (3 to 6 meter)**
- **Diffuser for wide dispersion of high frequencies**
- **For 8, 16 Ohm and 100 V line**
- **Back can made of steel**

- **Fire resistant baffle and rim according to**
- **UL94 V-0, plus steel punched net**
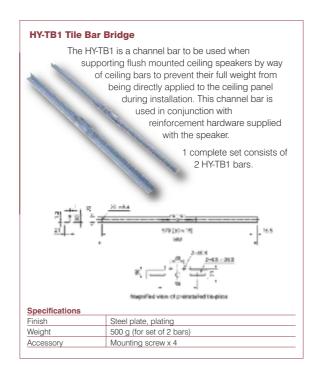- **Halls, Corridors, Stairways**

Options

- **HY-AH1: Anchor Hanging Bracket**
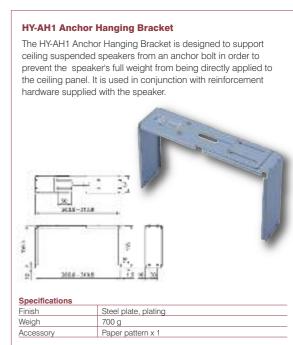- **HY-TB1: Tile Bar Bridge**

Specifications F-2852C

|	
System	2-way, 16 cm Cone Driver, Bass-Reflex
Power Handling Capacity	180 W (8 Ohm)
Rated Input Power	60 W (High Impedance, 16 Ohm)
Tappings 100 V	60 W / 30 W / 15 W / 3 W
Tappings 70 V	60 W / 30 W / 15 W / 7.5 W / 1.5 W
Frequency Response	60 Hz…20 kHz (-10 dB)
SPL (1 W / 1 m)	91 dB
SPL at Rated Input (1 m)	109 dB
Dimensions of Baffle	Ø 280 mm
Mounting Depth	max. 227 mm
Ceiling Hole Diameter	250 mm
Weight	5.1 kg

F-Series
Accessories for F-Series Speakers
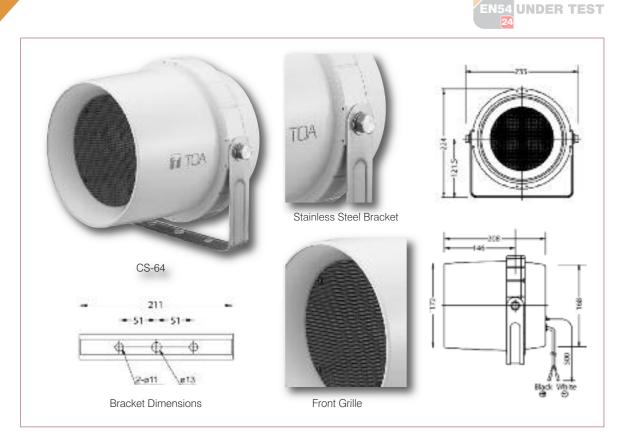
HY-BC1 Back Can

The HY-BC1 Back Can is a metal case attached to flush-mount ceiling speaker when mounted in exposed applications.

The Back Can is hung from a ceiling suspension pipe.

Specifications

Finish	Surface-treated steel plate, t0.8, black, paint
Weight	1,5 kg
Accessory	Rubber grommet x 2

HY-TR1 Trim Ring

The HY-TR1 Trim Ring allows installation of flush-mounted ceiling speakers in pre-existing ceiling panel holes which are over 200 mm in diameter.

The use of 2 Trim Rings allows the speaker to be mounted in holes from 240 mm to 300 mm in diameter.

Specifications

Ceiling Hole Diameter	ø200 – ø300 mm
Finish	Surface-treated steel plate, white, paint
Weight	500 g

HY-TB1 Tile Bar Bridge

The HY-TB1 is a channel bar to be used when supporting flush mounted ceiling speakers by way of ceiling bars to prevent their full weight from being directly applied to the ceiling panel during installation. This channel bar is used in conjunction with reinforcement hardware supplied with the speaker.

1 complete set consists of 2 HY-TB1 bars.

Specifications

Finish	Steel plate, plating
Weight	500 g (for set of 2 bars)
Accessory	Mounting screw x 4

HY-AH1 Anchor Hanging Bracket

The HY-AH1 Anchor Hanging Bracket is designed to support ceiling suspended speakers from an anchor bolt in order to prevent the speaker's full weight from being directly applied to the ceiling panel. It is used in conjunction with reinforcement hardware supplied with the speaker.

Specifications

Finish	Steel plate, plating
Weigh	700 g
Accessory	Paper pattern x 1

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CS-64
Splashproof Projection Speaker

EN54 UNDER TEST 24

CS-64

Stainless Steel Bracket

Bracket Dimensions

Front Grille

Features

- Round splashproof speaker
- 6 W
- For outdoor use
- Lightweight and rugged construction
- Exponential horn for improved directivity
- High SPL
- Complete with mounting bracket for easy installation
- For 100 V, 70 V systems with rotary impedance selector switch
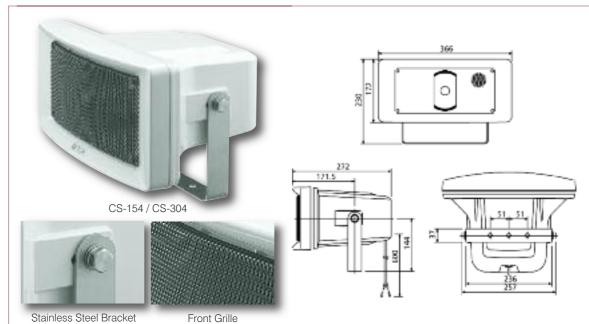- The enclosure complies with IP-64 Standards

Options

- BS-5839 part 8

Specifications CS-64

Speaker Component	12 cm
Rated Input	6 W
Continuous Program	9 W
Tappings 100 V	6 W / 3 W / 1 W
Tappings 70 V	6 W / 3 W / 1,5 W / 0,5 W
Frequency Response	130 Hz ... 13 kHz
SPL (1 W, 1 m)	96 dB
Dimensions	233 x 224 x 208 mm
Weight	1.5 kg
Finish	ABS resin, off-white, punched net: dark grey, bracket, screws: stainless steel

CS-154 / CS-304
Splash-proof Projection Speaker

EN54 UNDER TEST 24

CS-154 / CS-304

Stainless Steel Bracket   Front Grille

Features

- Square splashproof speaker (IP 64) for outdoor use
- 15 W (CS-154) or 30 W (CS-304)
- High SPL
- Weatherproof polyurethane resin paint
- Impact-proof light weight ABS resin enclosure
- Complete with stainless steel mounting bracket for easy installation
- For 100 V, 70 V systems with rotary impedance selector switch
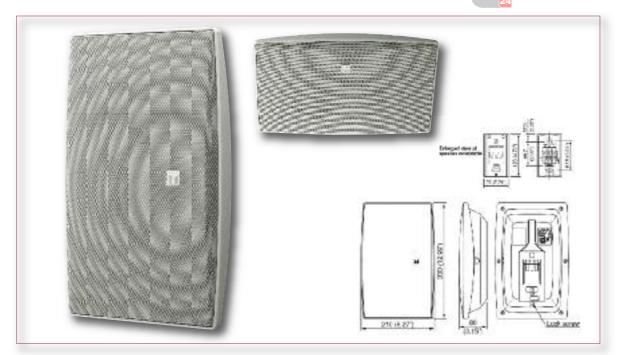- Constant directivity coverage (90 degree in horizontal)

Options

- BS-5839 part 8

Specifications

	CS-154	CS-304
Dynamic Cone Driver	12 cm	12 cm
Rated Input	15 W	30 W
Continuous Program	22.5 W	45 W
Tappings 100 V	15 W / 10 W / 5 W	30 W / 20 W / 10 W
Tappings 70 V	15 W / 7.5 W / 5 W / 2.5 W	30 W / 15 W / 10 W / 5W
Frequency Response	150 Hz ... 15 kHz	120 Hz ... 15 kHz
SPL (1 W, 1 m)	97 dB	98 dB
Dimensions	366 x 230 x 272 mm	366 x 230 x 272 mm
Weight	2.8 kg	3.1 kg
Features	IP 64 weatherproof	IP 64 weatherproof
Finish	ABS resin, off-white, punched net: dark grey, bracket, screws: stainless steel	ABS resin, off-white, punched net: dark grey, bracket, screws: stainless steel

BS-1034
Box Speaker

EN54 UNDER TEST
24

Features

- Easy and quick installation
- Two colours selectable: off-white, which matches any interior style, and silver, which adds a quality appearance.
- Beautiful design due to the Golden Ratio (1: 1.618)
- Innovative speaker design
- Low profile
- Ideally suited for BGM and announcements

Specifications BS-1034

Rated Input	10 W
Rated Impedance	100 V line: 1 kΩ (10 W), 2 kΩ (5 W), 3.3 kΩ (3 W), 10 kΩ (1 W)
	70 V line: 500 Ω (10 W), 1 kΩ (5 W), 2 kΩ (2.5 W), 3.3 kΩ (1.5 W), 10 kΩ (0.5 W)
Sensitivity	90 dB (1 W, 1 m)
Frequency Response	120 - 20,000 Hz
Speaker Component	Low frequency: 12 cm (5") cone-type, High frequency: Balanced dome-type
Input Connector	M4 screw terminal, distance between barriers: 11 mm (0.43")
Finish	Enclosure: HIPS resin (fire resistant grade UL94 V-0 or its equivalent),
	off-white (RAL 9010 or equivalent color)
	Net: Steel plate, off-white (RAL 9010 or equivalent color), paint
Dimensions	210 (W) × 330 (H) × 80 (D) mm (8.27" × 12.99" × 3.15")
Weight	1.4 kg (3.09 lb)
Accessories	Speaker receptacle …1, Wall mounting screw …2

SC-610M / SC-615M / SC-630M
Reflex Horn Speaker with Wide Emergency Response

Features

- 3 different power outputs available: 10 W (SC-610M), 15 W (SC-615M) or 30 W (SC-630M)
- High impedance 100 V line
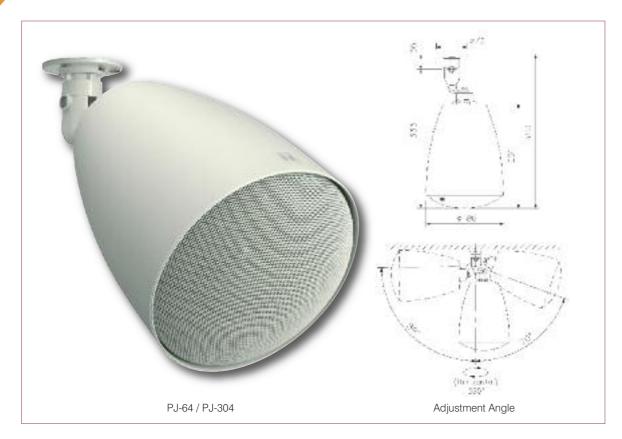
Options

- BS-5839 part 8 available as an option

Specifications	SC-610M	SC-615M	SC-630M
	EN54 24 UNDER TEST	EN54 24 UNDER TEST	
Rated Input	10 W	15 W	30 W
Rated Impedance 100 V	10 W / 5 W / 3 W / 1 W	15 W / 10 W / 5 W / 3 W	30 W / 15 W / 10 W / 5 W
Rated Impedance 70 V	10 W / 5 W / 2.5 W / 1.5 W / 0.5 W	15 W / 7.5 W / 5 W / 2.5 W / 1.5 W	30 W / 15 W / 7.5 W / 5 W / 2.5 W
SPL (1 W, 1 m)	110 dB (at 500 to 2500 Hz peak level)	112 dB (500 to 2500 Hz peak level)	113 dB (at 500 to 2500 Hz peak level)
Frequency Response	315 ... 12,500 Hz	280 ... 12,500 Hz	250 ... 10,000 Hz
Sensitivity when used as Microphone	-24 dB at 1 kHz	-22 dB at 1 kHz	-20 dB at 1 kHz
Operating Temperature	-20°C ... +55°C (must be free from dew condensation)	-20°C ... +55°C (must be free from dew condensation)	-20°C ... +55°C (must be free from dew condensation)
Speaker cable	600 mm in length, 6 mm in diameter, Polyvinyl chloride insulated cable	600 mm in length, 6 mm in diameter, Polyvinyl chloride insulated cable	600 mm in length, 6 mm in diameter, Polyvinyl chloride insulated cable
Dimensions (W x H x D)	172 x 161 x 188 mm	222 x 179 x 234 mm	285 x 227 x 277 mm
Weight	1.2 kg	1.3 kg	2 kg
Features	IP65 weatherproof	IP65 weatherproof	IP65 weatherproof

PJ-64 / PJ-304
Projection Speaker for Ceiling and Wall

PJ-64 / PJ-304

Adjustment Angle

Features

- Indoor speaker
- Wide range frequency response
- Housing: HIPS resin, grille: steel net
- Easy to mount
- Colour off-white (RAL 9010 or equivalent)
- Paintable
- For 100 V, 70 V systems, PJ-304 additionally for 8 Ohm systems
- Complete with mounting bracket for easy installation

Applications
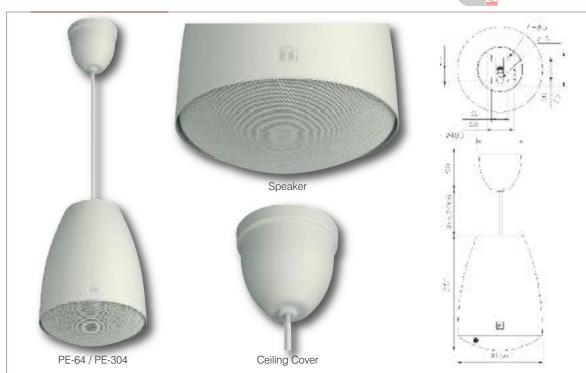
- For buildings where aesthetics play an important role

Specifications	PJ-64	PJ-304
Speaker Component	12 cm	12 cm
Rated Input	6 W	30 W
Impedance	100 V / 70 V	100 V / 70 V / 8 Ohm
Tappings 100 V	6 W / 3 W / 1 W	30 W / 20 W / 15 W / 10 W / 5 W
Tappings 70 V	3 W / 1.5 W / 0.5 W	30 W / 20 W / 15 W / 10 W / 5 W
Frequency Response	100 Hz ... 18 kHz	70 Hz ... 20 kHz
SPL (1 W, 1 m)	90 dB	91 dB
Dimensions (with bracket)	ø 186 x 369 mm	ø 186 x 369 mm
Weight	1.5 kg	2.1 kg

PE-64 / PE-304
Speaker for Ceiling Suspension Installation

EN54 24 UNDER TEST

Speaker

PE-64 / PE-304

Ceiling Cover

Features

- Special design to blend with lighting equipment
- 30 W (PE-304) or 6 W (PE-64) rated input
- Rugged HIPS resin enclosure
- Excellent sound quality
- Colour: off-white (RAL 9010 or equivalent)
- Paintable
- 12 cm dynamic cone speaker plus balanced dome tweeter
- Inputs for 100 V and 70 V systems, PE-304 additionally with 8 Ohm input.
- Easy impedance selection
- Equipped with 5 m cord

Applications

- Supermarket, shopping mall, lobby, rooms without suspended ceilings

| Specifications	PE-64	PE-304
Dynamic Cone Driver	12 cm	12 cm
Rated Input	6 W	30 W
Impedance	100 V / 70 V	100 V / 70 V / 8 Ohm
Tappings 100 V	6 W / 3 W / 1 W	30 W / 20 W / 15 W / 10 W / 5 W
Tappings 70 V	3 W / 1.5 W / 0.5 W	30 W / 20 W / 15 W / 10 W / 5 W
Frequency Response	100 Hz...18 kHz	70 Hz...20 kHz
SPL (1 W, 1 m)	90 dB	91 dB
Connection	Push-in connector (bridging terminal, 2-branch)	Push-in connector (bridging terminal, 2-branch)
Dimensions	ø 186 x 251 mm	ø 186 x 251 mm
Weight	1.5 kg	2.1 kg

Line Array Speaker Systems
Type-H / Type-S Series
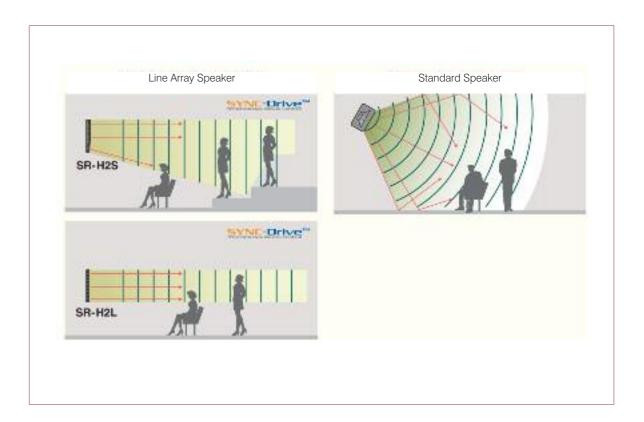
Slim Line Array Speakers with Clear and Well Focused Sound Enhancement

Among TOA's wide range of sound reinforcement products, Line Array Speaker Systems play an important role in providing high quality audio for medium sized venues that can range from houses of worship, gymnasiums, to various sports facilities and other problematic environments.

TOA Line Array Speaker Systems are designed to perform optimally with ideal sound dispersion characteristics in spaces that pose difficulties for more conventional speaker systems. Available in different configurations and with a wide range of mounting possibilities to suit particular requirements precisely, these slim tower-configured speakers and modular speaker systems offer perfect solutions for difficult sound reinforcement problems that require effective coverage.

TOA Line Array Speaker Systems are designed for permanent installations and are available in slim, tower-configured types, the SR-S4L and SR-S4S (Type S). The SR-H Series comprises of small, unobstrusive Line Arrays and is especially designed for locations with regular speech transmission.

The ultimate goal in providing this sophisticated acoustical design is to increase intelligibility even in situations where the listener is under stress such as emergency situations..

Line Array Speaker   Standard Speaker

SR-H2S

SR-H2L

LINE ARRAY PERFORMANCE SYSTEMS

SR-H2L / SR-H2S / SR-H3L / SR-H3S

▸ Curved speaker models rely on a hyper-clothoid concept curved array that ensures improved horizontal dispersion.

Application Versatility

▸ Selection among four models is possible, enabling more extensive customization of the listening area.

▸ Most applications are fully covered by no-extension (one cabinet) set-ups, but up to two units can be connected when an expanded vertical coverage area is suitable.
  Straight type only

▸ Attractive & narrow 84mm design is thinner than earlier similar units, allowing speakers to fit in well with the interior decor of the venue.

Space/Energy Efficient Design

▸ Energy-efficient line array configuration requires less input power to deliver required output.

▸ High-quality sound reproduction even when an equalizer is not used.

▸ Fully effective operation is possible without additional amplification equipment, saving space and adding to the unit's cost effectiveness.

Easy and Flexible Installation

▸ A wide variety of optional mounting brackets is available, for wall-mounting, rigging, and stand mounting the Type H speakers.

▸ Removable input terminal connectors make hook-ups easier and less cumbersome.

▸ For high-impedance operation, an optional matching transformer MT-S0301 is available.

Outstanding Sound Quality

▸ Sync-Drive (Synchronous Nexus Control) technology keeps the audio in phase with its source at the speakers to create an ideal linear sound source.

▸ Line array configuration of speakers works to produce clear sound with reduced attenuation over distance.

▸ Speakers are reflection-free and feedback resistant.

▸ Speakers are designed for optimally precise directivity of sound, especially horizontal directivity, so the audio dispersion can be more accurately focused at the targeted area.

Specifications	SR-H2L	SR-H2S
Enclosure	Bass-reflex type	Bass-reflex type
Power Handling Capacity	Continuous program: 180W	Continuous program: 180W
Rated Impedance	8Ω	8Ω
Sensitivity (1W, 1m equivalent measured at 4m)	92dB	90dB
Frequency Response	80 – 18,000Hz (when using optional Digital processor)	90 – 17,000Hz (when using optional Digital processor)
Directivity Angle	Horizontal: 90° Vertical: 0° (within the range of speaker height)	Horizontal: 90° Vertical: 20° (within the range of speaker height)
Speaker Component	7cm (2.8") cone-type × 9	7cm (2.8") cone-type × 9
Input Connector	Removable input connector	Removable input connector
Finish Enclosure: Front grille:	MDF, white, urethane paint Punched steel plate, white, acrylic paint	MDF, white, urethane paint Punched steel plate, white, acrylic paint
Dimensions	84 (W) × 668.4 (H) × 115 (D)mm (3.31" x 26.31" x 4.53")	84 (W) × 663.4 (H) × 115 (D)mm (3.31" x 26.12" x 4.53")
Weight	4.4kg (9.7 lb)	4.2kg (9.26 lb)
Option	Extension plate: SR-EP3, Wall mounting bracket: SR-WB3, Wall tilt bracket: SR-TB3, Flying bracket: SR-FB3, Speaker stand adapter: SR-SA3, Speaker stand: ST-33B, Matching transformer: MT-S0301, Digital processor:	

Specifications	SR-H3L	SR-H3S
Enclosure	Bass-reflex type	Bass-reflex type
Power Handling Capacity	Continuous program: 180W	Continuous program: 180W
Rated Impedance	8Ω	8Ω
Sensitivity (1W, 1m equivalent measured at 4m)	95dB	92dB
Frequency Response	110 – 18,000Hz (when using optional Digital processor)	90 – 17,000Hz (when using optional Digital processor)
Directivity Angle	Horizontal: 90° Vertical: 0° (within the range of speaker height)	Horizontal: 90° Vertical: 20° (within the range of speaker height)
Speaker Component	7cm (2.8") cone-type × 16	7cm (2.8") cone-type × 16
Input Connector	Removable input connector	Removable input connector
Finish Enclosure: Front grille:	MDF, white, urethane paint Punched steel plate, white, acrylic paint	MDF, white, urethane paint Punched steel plate, white, acrylic paint
Dimensions	84 (W) × 1186.4 (H) × 115 (D)mm (3.31" x 46.71" x 4.53")	84 (W) × 1177.2 (H) × 157 (D)mm (3.31" x 46.35" x 6.18")
Weight	7.6kg (16.75 lb)	7.9kg (17.42 lb)
Option	Extension plate: SR-EP3, Wall mounting bracket: SR-WB3, Wall tilt bracket: SR-TB3, Flying bracket: SR-FB3, Speaker stand adapter: SR-SA3, Speaker stand: ST-33B, Matching transformer: MT-S0301, Digital processor	

Driver Complement

▶ Both speaker types are 2-way line array speakers, each containing 32 speaker elements 8 x 10 cm woofers and 24 high frequency drivers. Driver units are installed vertically and with minimal space between units in order to create a continuous linear sound source. This enables delivering a uniform sound pressure that resists attenuation with distance.

Sound Dispersion Characteristics

▶ The SR-S4L speaker features a linear design tailored for distance sound transmission applications and the SR-S4S features a gently curved line designed for a 10° vertical coverage area which offers ideal sound coverage over a shorter distance.

Directed Sound Dispersion

▶ Type S Series speakers limit vertical sound dispersion in order to focus directivity at the targeted listening area.

Multi Speaker Array Configurable

▶ Both systems can be combined to realize a versatile speaker array that performs equally well in terms of sound coverage and dispersion over short and long distances. Less difference in sound level is perceived whether close to or somewhat distant from the speakers, providing a uniform response. Individual speaker systems of each type can be assembled together as multiple configurations, acting as longer sound sources that can deliver greater output as well as project the sound a greater distance.

Reflection Free

▶ The speakers' construction and characteristics make them resist floor and ceiling-originating reflections, enhancing clarity even in reverberant spaces and other problematic environments.

Feedback Resistant

▶ The design of the speakers also makes them highly resistant to annoying feedback because volume levels are not extraordinarily high even close to the speakers and makes setting gain levels easier.

Biamp or Single Amp Drive

▶ Factory-set for single amplifier driving, the Type S series speakers can simply be set for biamping by making a simple internal wiring change. For optimal biamping, a digital signal processor can be employed to set crossover frequency points.

High Impedance Compatible

▶ The speaker can also be conveniently set for high impedance applications by using the optional MT-S0601 matching transformer. This option is only possible when driving the speaker with a single amplifier.

Line Array Speaker   Standard Speaker

SR-S4L / SR-S4LWP / SR-S4S / SR-S4SWP
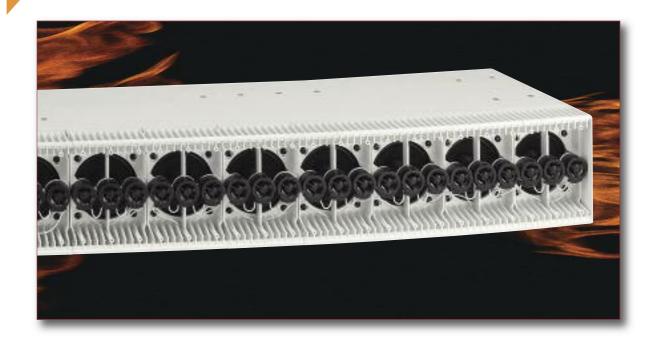
LINE ARRAY PERFORMANCE SYSTEMS

Specifications — SR-S4L / SR-S4LWP

Specifications	SR-S4L	SR-S4LWP
Enclosure	Bass-reflex type	Sealed type
Power Handling Capacity	Continuous program: 600W (single amp mode)	Continuous program: 600W (single amp mode)
	Low 240W, High 240W (biamp mode)	Low 240W, High 240W (biamp mode)
Rated Impedance	8Ω (single amp mode) / Low 8Ω, High 8Ѳ (biamp mode)	8Ω (single amp mode) / Low 8Ω, High 8Ѳ (biamp mode)
Sensitivity (1W, 1m)	94dB (1W, 1m)	94dB (1W, 1m)
Frequency Response	70 – 20,000Hz (when using the optional Digital processor)	
Crossover Frequency	3,500Hz	3,500Hz
Directivity Angle	Horizontal: 90°	Horizontal: 90°
	Vertical: 0° (within the range of speaker height)	Vertical: 0° (within the range of speaker height)
Speaker Component	Low frequency: 10cm (4") cone-type × 8	Low frequency: 10cm (4") cone-type × 8
	High frequency: 2.5cm (1") balanced dome-type × 24	High frequency: 2.5cm (1") balanced dome-type × 24
Input Connector	M5 screw terminal, distance between barriers:	M5 screw terminal, distance between barriers:
	12.2mm and Neutrik NL4MP x 2	12.2mm and Neutrik NL4MP x 2
Connected Cable	—	Direct cable withdrawal from internal speaker:
		ø8.6mm, conductor cross section: 1.25mm2,
		4-core cable, 3m
Dust/Water Protection	—	IPX4
Finish — Enclosure:	MDF, white, paint	Plywood, white, urethane coating
Front grille:	Punched steel plate, white, acrylic paint	Punched stainless steel (SUS304), white, paint
Dimensions	160 (W) × 895 (H) × 255 (D)mm (6.30" × 35.24" × 10.04")	160 (W) × 895 (H) × 255 (D)mm (6.30" × 35.24" × 10.04")
Weight	16kg (35.27 lb)	16kg (35.27 lb)
Accessory	Bi-amplifier drive rating label × 1, Bi-amplifier drive input indication label × 1	
Option	Matching transformer: MT-S0601, Extension plate:	Matching transformer: MT-S0601, Extension plate:
	SR-EP4, Flying bracket: SR-FB4, Wall mounting	SR-EP4WP, Wall tilt bracket: SR-TB4WP,
	bracket: SR-WB4, Wall tilt bracket: SR-TB4,	Wall mounting bracket: SR-WB4WP,
	Stand adapter: SR-SA4, Protection pad: SR-PP4,	Protection pad: SR-PP4, Digital processor: DP-0206
	Floor stand: SR-FS4, Digital processor: DP-0206	

Specifications — SR-S4S / SR-S4WWP

Specifications	SR-S4S	SR-S4WWP
Enclosure	Bass-reflex type	Sealed type
Power Handling Capacity	Continuous program: 600W (single amp mode)	Continuous program: 600W (single amp mode)
	Low 240W, High 240W (biamp mode)	Low 240W, High 240W (biamp mode)
Rated Impedance	8Ω (single amp mode) / Low 8Ω, High 8Ѳ (biamp mode)	8Ω (single amp mode) / Low 8Ω, High 8Ѳ (biamp mode)
Sensitivity (1W, 1m)	93dB (1W, 1m)	93dB (1W, 1m)
Frequency Response	70 – 20,000Hz (when using the optional Digital processor)	
Crossover Frequency	3,500Hz	3,500Hz
Directivity Angle	Horizontal: 90°	Horizontal: 90°
	Vertical: 10°	Vertical: 10°
Speaker Component	Low frequency: 10cm (4") cone-type × 8	Low frequency: 10cm (4") cone-type × 8
	High frequency: 2.5cm (1") balanced dome-type × 24	High frequency: 2.5cm (1") balanced dome-type × 24
Input Connector	M5 screw terminal, distance between barriers:	M5 screw terminal, distance between barriers:
	12.2mm and Neutrik NL4MP x 2	12.2mm and Neutrik NL4MP x 2
Connected Cable	—	Direct cable withdrawal from internal speaker:
		ø8.6mm, conductor cross section: 1.25mm2,
		4-core cable, 3m
Dust/Water Protection	—	IPX4
Finish — Enclosure:	MDF, white, paint	Plywood, white, urethane coating
Front grille:	Punched steel plate, white, acrylic paint	Punched stainless steel (SUS304), white, paint
Dimensions	160 (W) × 892 (H) × 303 (D)mm (6.30" × 35.12" × 11.93")	160 (W) × 892 (H) × 303 (D)mm (6.30" × 35.12" × 11.93")
Weight	16kg (35.27 lb)	16kg (35.27 lb)
Accessory	Bi-amplifier drive rating label × 1, Bi-amplifier drive input indication label × 1	
Option	Matching transformer: MT-S0601, Extension plate:	Matching transformer: MT-S0601, Extension plate:
	SR-EP4, Flying bracket: SR-FB4, Wall tilt bracket:	SR-EP4WP, Wall tilt bracket: SR-TB4WP,
	SR-TB4, Stand adapter: SR-SA4, Protection pad:	Protection pad: SR-PP4, Digital processor: DP-0206
	SR-PP4, Digital processor: DP-0206	

LINE ARRAY PERFORMANCE SYSTEMS