



VOICE ALARM SYSTEMS

We supply sound, not equipment.
www.toa.eu

Steps,
noises,
hustle and bustle...

... and yet you are still led out quickly
and safely in an emergency.



Security with conviction.

Proven quality by TOA.

Consistently TOA has continued to strengthen its role as an innovative leader and redefined the standards of technical improvement. Founded 1934 in Kobe, Japan, we benefit from 80 years of experience in research, development and international sales and marketing of numerous products in the field of public address systems. Thereby our longstanding know-how guarantees proven quality and the utmost peace of mind.

It is our goal to provide you high quality products, as well as first-class sound, to find the ideal acoustic solution for each of your applications.

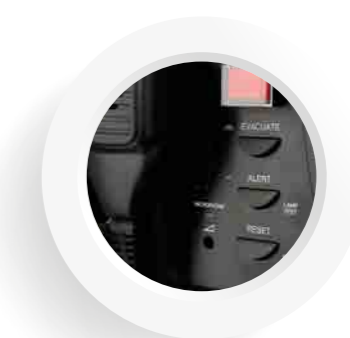
We are proud to be one of the first companies to develop a fully EN 54 compliant voice alarm systems and that we can offer four different systems along with a variety of certified loudspeakers for several applications today.

Since April 2011 the EN 54 standards are mandatory in all EU member states and consist of three parts (part 4: refers to power supplies, part 16: refers to voice alarm control and indicating equipment and part 24: refers to loudspeakers), which ensure the functionality of the system under extreme external conditions.

At TOA, we don't only guarantee you the very best sound quality, but a dependable system to go with it.

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VX-3000 series Highly Integrated Voice Alarm & Public Address System

Description

The issue of security is more than ever important. Our VX-3000 is a reliable and energy-saving voice alarm system that combines all important functions for PA/VA in one unit frame. The limited number of components makes the design and installation much easier, as well as saving space and reducing cable complexity. This enables rapid system configuration and makes the VX-3000 a cost effective system.

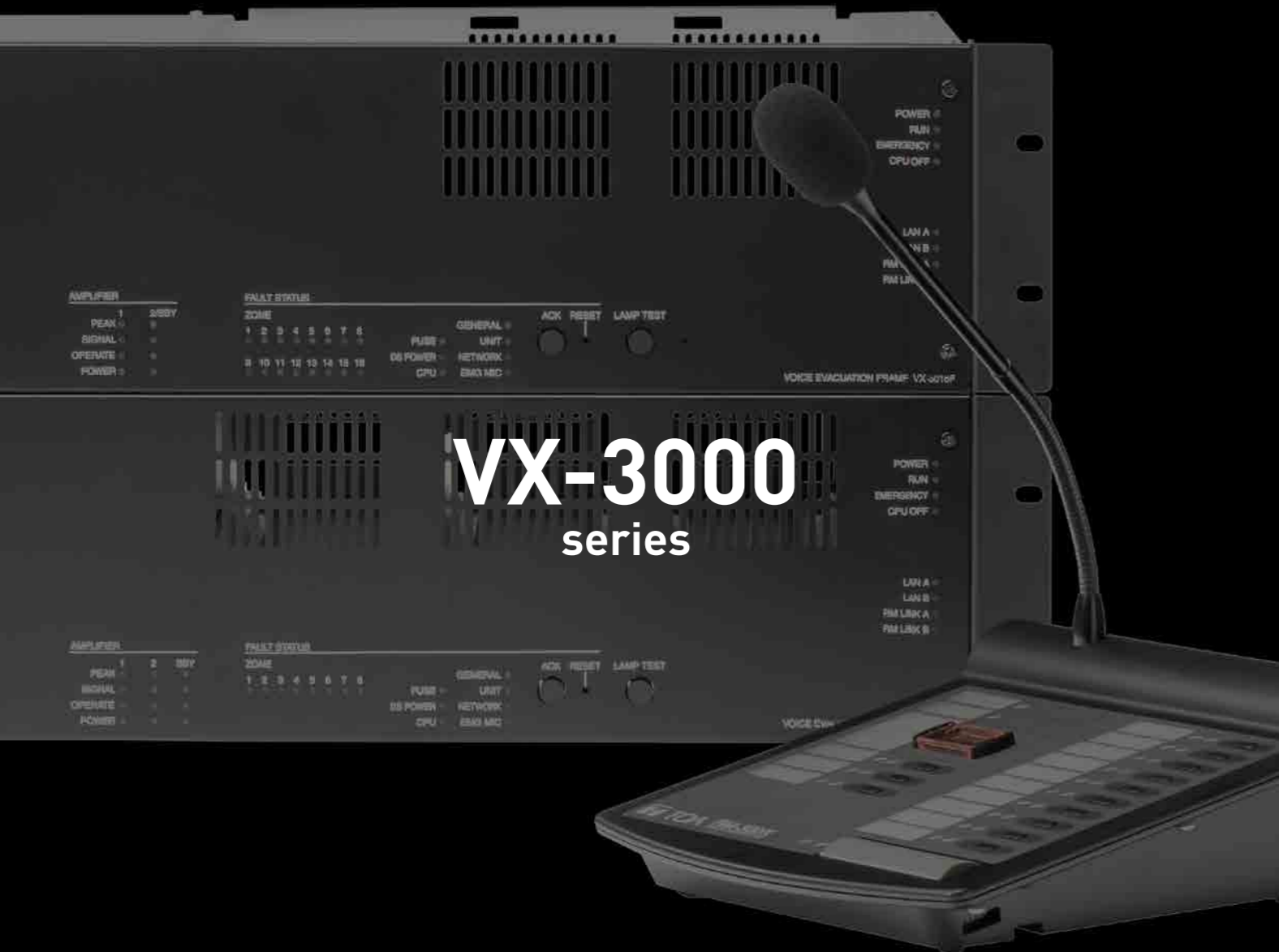
It comes with low loss modular class D amplifiers, with 3 different output ratings. These can easily be removed or replaced simply by unplugging them; there is no need for specialist tools. By using low loss modular class D amplifiers and modern power supply switching technology the system becomes much more energy efficient and keeps the operating costs low.

Thanks to its flexible and scalable system architecture the VX-3000 system can be used for both small and large applications, with up to 256 remote microphones and 128 audio sources.

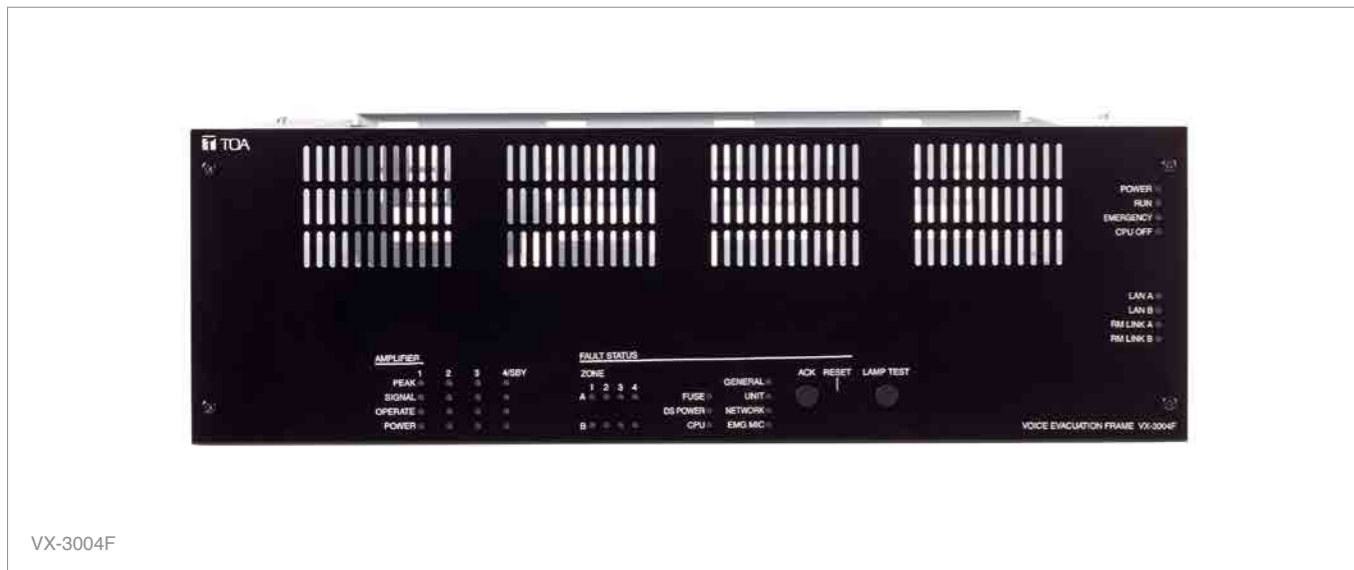
System Features

- > Compact: All functions, all inputs and outputs in one unit
- > Cost effective: Easy system configuration thanks to small number of system components
- > Flexible: Broadcast of many different audio signals simultaneously, flexible speaker driving from 1 zone per amplifier up to 64 zones per amplifier
- > Scalable: up to 256 remote microphones
- > Light-weight: Modern supply switching technology and digital amplifiers
- > Energy saving: Standby mode for low power consumption during battery backup reduces the required battery capacity
- > Decentralized: IP Network based
- > Advanced ambient noise control (ANC) (Q4)
- > Master-less system provides high security if one line fails (Q4)

| Maximum System Capacity | |
|-------------------------|----------|
| Output Power | 64.000 W |
| Speaker Zones | 512 |
| Remote Mic connection | 256 |



VX-3000 series Frames



VX-3004F

VX-3004F / VX-3008F / VX-3016F

- > VX-3004F: up to 4 amps (1-zone - 1 amp, 4 AB-zones or 3 AB zones + standby amp)
- > VX-3008F: up to 3 amps (8 zones switching between 2 amps + standby amp or 8 zones freely assignable to 1 of 2 amps)
- > VX-3016F: up to 2 amps (16 switched zones + standby amp or 2 x 8 switched zones)
- > All mandatory indications by EN54-16
- > Status indication for each speaker line
- > Fault acknowledge and lamp test button
- > Input DSP: flexible filter types and compressor (Q4)
- > Output DSP: flexible filter types, compressor and delay up to 2.7 sec. (Q4)

| Specifications | VX-3004F | VX-3008F | VX-3016F |
|------------------------|---|----------|----------|
| Applicable Model | System VX-3000 | | |
| Power Source | 31 V DC (operating range: 20 – 40 VDC) | | |
| Speaker Output | 4 AB Zones | 8 | 16 |
| Power Amplifier | 4 | 3 | 2 |
| Audio input | 4 (Line: -20 dBV / Mic: -60 dBV, phantom power selectable) | | |
| RM Link | 2 (max. 8 RM) | | |
| LAN | 2 | | |
| Control Input | 16+2 (FDS) | | |
| Control Output | 8+3 (CPU OFF) | | |
| ATT Control Output | 8 | 8 | 16 |
| Finish | Panel: Surface treated steel plate, black, 30% gloss, paint | | |
| Dimensions (W x H x D) | 482 x 132.6 x 345 mm (19", 3U) | | |
| Weight | 7.6kg | | 7.9kg |

VX-3000 series Amplifiers



VX-050DA

VX-015DA / VX-030DA / VX-050DA

- > Low loss modular class D amplifiers
- > Modules to be mounted in the frame units
- > Three different power levels: 150 W, 300 W or 500 W
- > Can easily be removed or replaced simply by unplugging them; no need for special tools
- > Dust filter, easy to clean
- > 100 V Output without transformer resulting in light-weight units
- > Fuse easily accessible from rear

| Specifications | VX-015DA | VX-030DA | VX-050DA |
|------------------------|--|---------------|---------------|
| Applicable Model | VX-3004F, VX-3008F, VX-3016F | | |
| Power Source | 31 V DC (operating range: 20 – 40 VDC) | | |
| Amplification System | Class D | | |
| Rated Output Power | 150 W (100 V) | 300 W (100 V) | 500 W (100 V) |
| Supported Loads | 50 V / 70 V / 100 V | | |
| Frequency Response | 40 Hz – 16 kHz ± 3 dB | | |
| Distortion | 1% or less (at 100 V line, A-weighted) | | |
| Finish | Surface-treated steel plate | | |
| Dimensions (W x H x D) | 79 x 91 x 358.2 mm | | |
| Weight | 1.4 kg | | |

VX-3000 series Emergency Remote Microphone



RM-200SF / RM-320F

- For emergency broadcast
- For activation of emergency mode, start and stop automatic broadcasts of emergency announcements, reset emergency signals, and live microphone announcements
- CPU-switch for emergency broadcast to all zones even in case of a CPU error
- Up to 4 RM-320F Remote Microphone Extension units can be used with each RM-200SF Remote Microphone

Options

- RM-320F: Key extension unit
- RM-210: Key extension unit
- WB-RM200: Wall-mounting bracket

| Specifications | RM-200SF | RM-320F |
|------------------------|--|---------------------------------------|
| Applicable Model | VX-3004F, VX-3008F, VX-3016F, RM-210, RM-320F, SX-200RM in SX-2100AI | RM-200SF, RM-300MF, RM-200XF, RM-200M |
| Power Requirement | 24 V DC (operating range: 15 – 40 V DC) | From remote microphone |
| Distortion | Under 1 % | - |
| Frequency Response | 200 Hz – 15 kHz | - |
| Signal-to-Noise Ratio | Over 55 dB | - |
| Audio Output | 0 dBV, 600 Ω, balanced | - |
| Microphone | Unidirectional dynamic microphone AGC | - |
| Volume Control | Microphone, speaker | - |
| Key Extension | Max. 4 RM-320F | 20 keys, freely assignable |
| Finish | ABS resin, bluish gray (PANTONE 538 or its equivalent) | |
| Dimensions (W x H x D) | 200 x 215 x 95 mm | 175 x 215 x 70 mm |
| Weight | 1.48 kg | 700 g |

VX-3000 series Remote Microphone



RM-300X / RM-210F

- 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)
- RM-210F: Key extension unit with 10 additional keys
- Up to 7 RM-210F Remote Microphone Extension units can be used with each RM-300X Remote Microphone

Options

- AD-246: Power supply unit
- WB-RM200: Wall-mounting bracket

| Specifications | RM-300X | RM-210F |
|---------------------------|---|-------------------------------------|
| Applicable Model | VX-3004F, VX-3008F, VX-3016F | |
| Power Source | 24 V DC (operating range: 15 - 40 VDC), supplied from the audio input unit or DC input power supply connector | From remote microphone |
| Current Consumption | Under 240 mA | 80 mA max. (from remote microphone) |
| Audio Output | 0 dBV, 600 Ω, balanced | - |
| External Microphone Input | -40 dB, 2.2 kΩ, unbalanced, mini jack, phantom powering | - |
| Frequency Response | 100 Hz – 20 kHz | - |
| Distortion | Under 1 % | - |
| Signal-to-noise Ratio | Over 60 dB | - |
| Volume Control | Microphone volume control, Monitor speaker volume control | - |
| Key Extension | Max. 7 RM-210F | 10 keys, freely assignable |
| Maximum Cable Distance | 1,200 m | - |
| Finish | ABS resin, black | |
| 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 |

VX-3000 series Power Supply

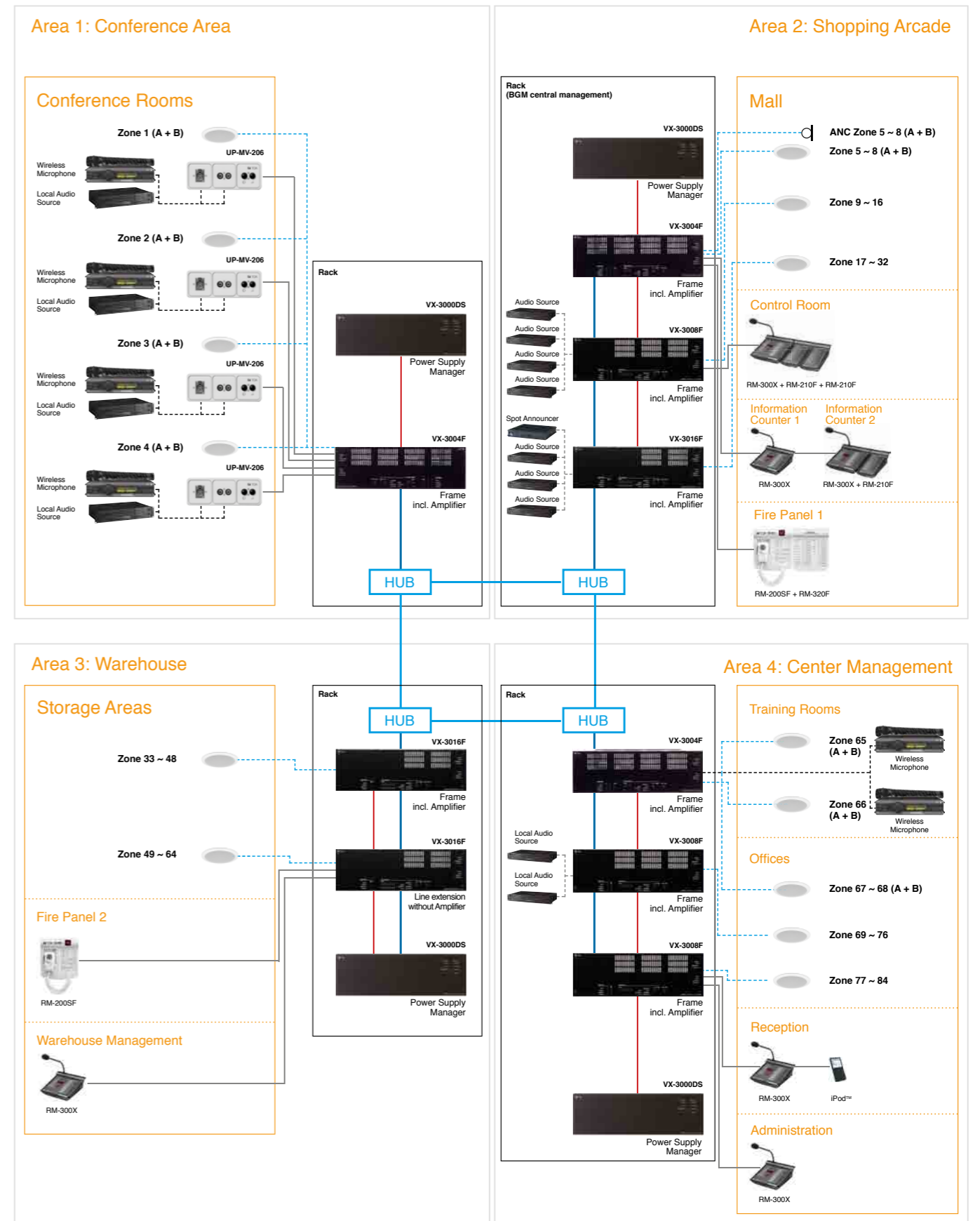


VX-3000DS / VX-3150DS

- > DC power supply to all system components
- > Combination of two built-in power source units with a high-performance charger
- > Automatical switch to auxiliary battery power if the AC power supply is down
- > VX-3000DS: EN 54-4 certified, Certificate No: 1134-CPR-137

| Specifications | VX-3000DS | VX-3150DS |
|----------------------------------|--|---|
| Applicable Model | System VX-3000 / VX-2000 / SX-2000; all amplifiers | |
| Power Source | 220 – 230 V AC, 50/60 Hz | |
| Power Consumption | 2800 W max in total (at rated output with charging), 350 W max each (EN 60065) | approx. 1450 W max in total (at rated output with charging), 200 W max each (EN 60065) |
| DC Power Output (AC mode) | Rated output: 2300 W (31 V, 72.5 A, total DC power output), Peak output: 2780 W (29 V, 96 A, total DC power output) | Rated output: 1150 W (31 V, 25 A, total DC power output), Peak output: 1390 W (29 V, 48 A, total DC power output) |
| DC Power Output | 8 x 31 V (19 – 33 V) 25 A max. each, M4 screw terminal, distance between barriers: 11 mm 3 x 31 V (19 – 33 V) 5 A max. each, removable terminal block (3 x 2 pins) 1 x 24 V (16 – 25 V) 0.3 A max., removable terminal block (1 x 2 pins) | |
| Charging Method | Temperature compensated trickle charging | |
| Charging Output Voltage | 27.3V ±0.3V (at 25 °C), Temperature correction coefficient: -40 mV/°C | |
| Battery Connection | One each positive and negative terminal, applicable cable diameter: AWG 6 – AWG 0 (AWG 1/0) (16mm2 – 50mm2) Line resistance within 4 mΩ/ total | |
| Control Connector DS LINK IN/OUT | RJ45 female connector for connecting the system and cascade connection, Shielded Twisted-pair straight cable (TIA/EIA-568A standard) Type of control signal: Battery check, AC power status, DC power status, charging circuit failure, battery failure, and communication | |
| Panel Indicator | AC power IN 1, IN 2 (Green), Charging (Green), Battery power (Green), Battery connect (Green), Battery condition (Green) | AC power IN 1, Charging (Green), Battery power (Green), Battery connect (Green), Battery condition (Green) |
| Finish | Panel: Surface-treated steel plate, black, 30% gloss, paint | |
| Dimensions (W x H x D) | 482 x 132.6 x 400.5 mm (19", 3U) | |
| Weight | 11.8 kg | approx. 8 kg |

VX-3000 series Application Example



VM-3000 series Integrated Voice Evacuation System

Description

The VM-3000 is a cost-effective integrated public address and voice alarm system. It is designed to fulfil the EN 54 European regulation for voice alarm and also engineered with powerful digital signal processor (DSP), ensuring high quality audio broadcasting for proper speech intelligibility. The compact design enables the system to fit best in various small to medium sized applications such as schools, shopping centres or restaurants.

System Features

- > Cost-effective integrated public address and voice evacuation system
- > Easy installation and compact design
- > EN 54 certified
- > Intuitive and userfriendly configuration through dedicated PC-Software
- > LCD display of current status and configuration settings
- > Built-in emergency microphone
- > Simultaneous broadcast of 2 emergency messages (alert and evacuation)
- > Remote maintenance via LAN
- > Continuous speaker line monitoring without interruption of BGM or paging announcements (no external amplifier required)
- > Modbus protocol ready
- > Complete fault detection and indication
- > 6 – 60 assignable speaker zones
- > 4 – 13 MIC/LINE audio inputs (volume setting for each audio output)
- > 8 remote microphones max. (4x general + 4x emergency; EN 54: max. 2x emergency or 4x general + 1x emergency)
- > 2 selectable BGM audio inputs
- > 8 priority levels
- > 1,000 system events can be logged
- > 6 high quality electronic voice messages

Maximum System Capacity

| | |
|-----------------------|---------|
| Output Power | 3,600 W |
| Speaker Zones | 60 |
| Remote Mic connection | 8 |



Certificate No: 1438-CPD-0180



VM-3000 series System Management Amplifier



VM-3240VA

VM-3240VA / VM-3360VA

- > 1 unit per system
- > 2 models available: 240 W or 360 W power output
- > 6 recorded general announcements and 2 recorded emergency announcements
- > 8 remote microphones max. (up to 4 emergency remote microphones)
- > 6 zones selectable from the front panel
- > Built-in high quality electronic voice message

Options

- > VM-3240E: 240 W Extension Amplifier
- > VM-3360E: 360 W Extension Amplifier
- > RM-300MF: Emergency Microphone
- > RM-200M: General Remote Microphone
- > IT-450: Input Transformer
- > VM-300SV: Pilot Tone Detection Module

VM-300SV Pilot Tone Detection Module

- > Speaker line failure can be detected with high accuracy when a VM-300SV unit (specifically designed for 100 V speaker line) is connected between the speaker line end and the emergency input terminal of the VM-3240VA, VM-3360VA, VM-3240E, or VM-3360E.



VM-3000 series System Management Amplifier



VM-3240VA (Rear)

Specifications

| | VM-3240VA | VM-3360VA |
|------------------------------|--|---|
| Applicable Model | VM-3240E, VM-3360E, VP-2241, VP-2421, VX-2000DS | |
| Power Requirement | 230 V AC, 50 / 60 Hz | |
| Power Consumption (AC mains) | 600 W (with rated output signal), 260 W (according to EN 60065) | 850 W (with rated output signal), 380 W (according to EN 60065) |
| Rated Output | 240 W | 360 W |
| Frequency Response | 50 Hz – 20 kHz, ± 3 dB (at 1/3 rated output) | |
| Distortion | Under 0.7% (at rated output, 1 kHz) | |
| Signal-to-Noise Ratio | Over 85 dB | |
| Inputs | Input 1 – 3: -50 dBV (MIC) / -10 dB (LINE) (changeable), 600 Ω , electronically balanced combined, XLR connector (female) / phone jack Input 4: -50 dBV (MIC) / -10 dB (LINE) (changeable), 600 Ω , electronically balanced, removable terminal block (14 x 2 pins) BGM 1 - 2: -10 dB, 10 k Ω unbalanced, RCA pin jack (2 x 2) 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 dBV, 10 k Ω , unbalanced, RCA pin jack | |
| Control | Input 1 - 8: No-Voltage make contact input, open voltage: 24 VDC, short-circuit current: under 2 mA, removable terminal block (14 pins) Output 1 - 8: Isolated open collector output, withstand voltage: 30 VDC, operating current: under 10 mA, removable terminal block (14 x 2 pins) | |
| Emergency Control | Input 1 - 5: No-Voltage make contact input, open voltage: 24 VDC, short-circuit current: under 2 mA, RJ45 female connector Input 6: Isolated voltage input: Inactive: -24 V $\pm 20\%$ / Active: +24 V $\pm 20\%$, RJ45 female connector Status out: Relay contact output, withstand voltage: 40 VDC, operating current: 2 – 300 mA, RJ45 female connector | |
| Regulated Voltage Output | 24 VDC, maximum feeding current 0.3A | |
| Finish | Panel: Surface-treated steel plate, black, 30% gloss, paint | |
| Dimensions (W x H x D) | 482 x 132.6 x 431.2 mm (19", 3U) | |
| Weight | 16.5 kg | 19 kg |

VM-3000 series Extension Amplifier



VM-3240E / VM-3360E

- > System management amplifier can be expanded by connecting up to 9 extension amplifiers
- > 2 models available: 240 W or 360 W
- > 6 speaker line outputs
- > 8 control inputs and 8 control outputs for general purpose
- > 6 control inputs for emergency purpose and 3 control outputs for status information
- > Connection to system management amplifier via VM Link

Options

- > VM-3240VA: 240 W System Amplifier
- > VM-3360VA: 360 W System Amplifier
- > IT-450: Input Transformer
- > VM-300SV: Pilot Tone Detection Module

Specifications

| | VM-3240E | VM-3360E |
|------------------------------|---|---|
| Applicable Model | VM-3240VA, VM-3360VA, VP-2241, VP-2421, VX-2000DS | |
| Power Requirement | 230 V AC, 50/60 Hz | |
| Power Consumption (AC mains) | 600 W (with rated output signal), 260 W (according to EN 60065) | 850 W (with rated output signal), 380 W (according to EN 60065) |
| Rated Output | 240 W | 360 W |
| Frequency Response | 50 Hz – 20 kHz ± 3 dB (at 1/3 rated output) | |
| Distortion | Under 0.7% (at rated output, 1 kHz) | |
| Signal-to-Noise Ratio | Over 85 dB | |
| Inputs | External amplifier Input: 100 V Line removable terminal block (14 pins) Local input -50 dB (Mic) / -10 dB (Line), 600 Ω / electronically balanced, removable terminal block (14 x 2 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: 24 V DC, short-circuit current: under 2 mA, removable terminal block (14 pins) Output 1 – 8: Isolated open collector output, withstand voltage: 30 V DC, operating current: under 10 mA, removable terminal block (14 pins) | |
| Emergency Control | Input 1 – 5: No-Voltage make contact input, open voltage: 24 V DC, short-circuit current: under 2 mA, female connector RJ45 Input 6: Isolated voltage input: Inactive: -24 V $\pm 20\%$ / Active: +24 V $\pm 20\%$, RJ45 female connector Status out: Relay contact output, withstand voltage: 40 V DC, operating current: 2 – 300 mA, RJ45 female connector | |
| Regulated Voltage Output | 24 V DC, maximum feeding current 0.3 A | |
| Finish | Panel: Surface-treated steel plate, black, 30% gloss, paint | |
| Dimensions (W x H x D) | 482 x 132.6 x 407 mm (19", 3U) | |
| Weight | 16.5 kg | 19 kg |

VM-3000 series Emergency Remote Microphone



RM-300MF

- > 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-switch for emergency broadcast to all zones even in case of a CPU error

RM-320F

- > 20 function buttons per extension unit
- > System software allows assigning of functions to the individual keys
- > Up to 3 RM-320F extension units can be connected to the emergency microphone

Specifications

| | RM-300MF | RM-320F |
|------------------------|---|---|
| Applicable Model | VM-3240VA, VM-3360VA, RM-320F | RM-300MF, RM-200XF, RM-200SF |
| Power Requirement | 24 V DC (operating range: 14 – 28 V DC) | From remote microphone |
| Current Consumption | 100 mA (up to 550 mA with 3x RM-320F) | 180 mA max. (in terms of DC power inputs of RM-300MF) |
| Frequency Response | 200 Hz – 15 kHz | - |
| Distortion | Under 1% | - |
| Signal-to-Noise Ratio | Over 55 dB | - |
| Audio Output | 0 dBV, 600 Ω , balanced | - |
| Microphone | Unidirectional dynamic microphone | - |
| Volume Control | Microphone, buzzer | - |
| Key Extension | Max. 3 RM-320F | 20 keys, freely assignable |
| Connection Cable | Shielded CPEV cable or Category 5 STP cable, by M3 screw terminal | Connection by way of dedicated cable |
| Finish | ABS resin, bluish gray (PANTONE 538 or its equivalent) | |
| Dimensions (W x H x D) | 200 x 215 x 82.5 mm | 175 x 215 x 70 mm |
| Weight | 1.1 kg | 700 g |

VM-3000 series General Remote Microphone



RM-200M / RM-210

- > 11 function keys, 10 freely assignable
- > Zone, group and all-call paging, and activating pre-recorded messages
- > Extraordinary clarity and freedom from distortion by built-in compression circuit
- > Up to 4 RM-200M per system management amplifier
- > Up to 800 m total cable length
- > RM-210: Extension unit with 10 keys with similar functions as the remote microphone RM-200M

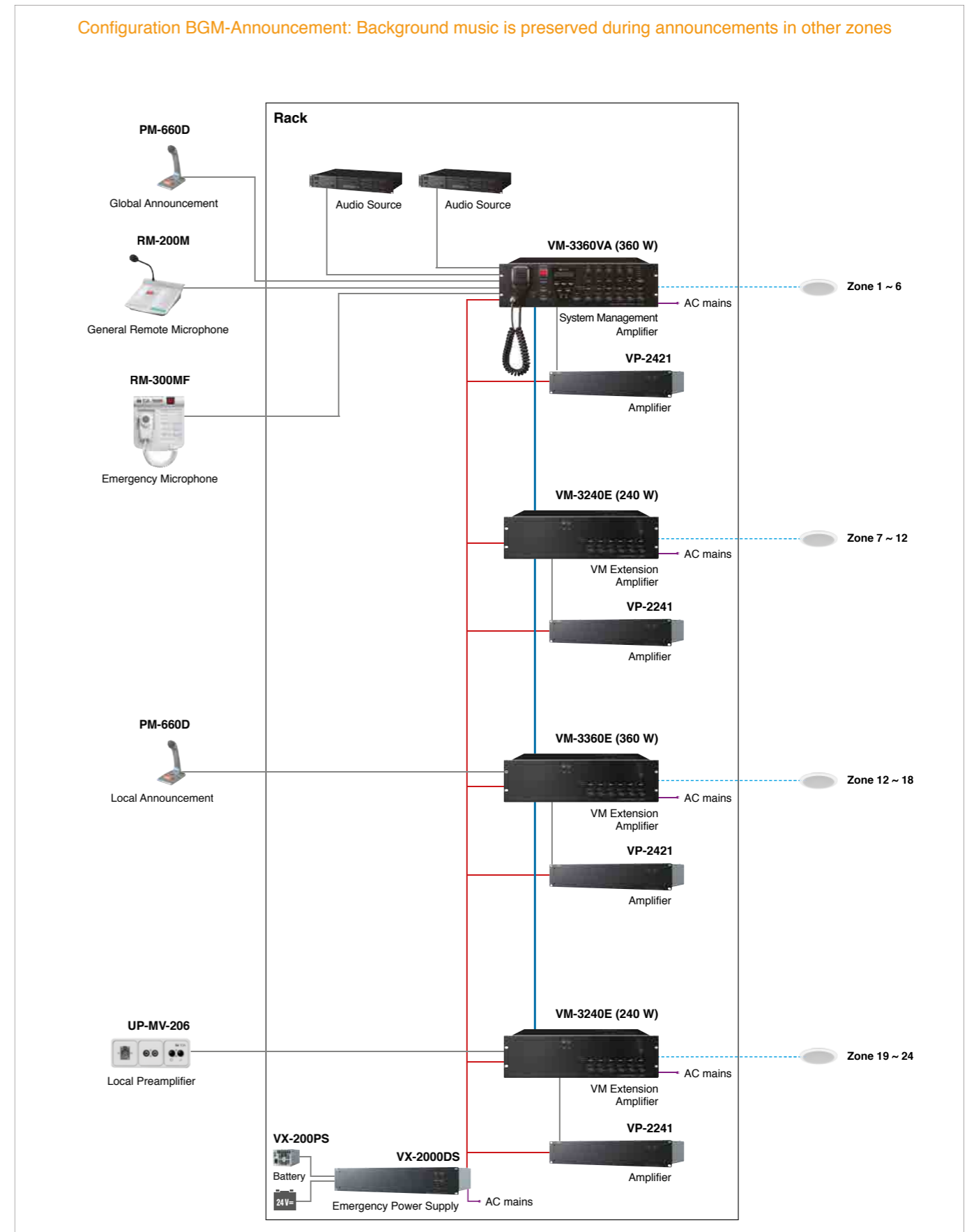
Options

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

| Specifications | RM-200M | RM-210 |
|--------------------------------|--|---|
| Applicable Model | VM-3240VA, VM-3360VA, RM-210 | RM-200M, RM-200X, RM-200XF, RM-200SA, RM-200SF |
| Power Requirement | 24 V DC (operating range: 14 – 28 V DC) | From remote microphone |
| Current Consumption | 100 mA maximum | 20 mA max. (in terms of RM-200M's DC power input) |
| Frequency Response | 100 Hz – 20 kHz | - |
| Distortion | Under 1 % | - |
| Signal-to-Noise Ratio | Over 60 dB | - |
| Audio Output | 0 dBV, 600 Ω, balanced | - |
| Microphone | Unidirectional electret condenser microphone | - |
| Zone Control | Assignable by PC setting software, Zones, Groups, All call | |
| Voice Message Control | Activation of 6 messages | |
| Key Extension | Max. 4 RM-210 | 10 keys, freely assignable |
| Connection Cable and Connector | Category 5 STP cable, RJ45 connector | Connection by way of dedicated cable |
| Finish | ABS resin, bluish gray (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 | 750g | 350g |

VM-3000 series Application Example

Configuration BGM-Announcement: Background music is preserved during announcements in other zones



VX-2000 series EN 54 Certified Voice Evacuation System

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

System Features

- > Module-base sound system
- > Max. 15 external audio inputs and 80 speaker lines
- > 4 bus audio matrix
- > Max. 128 control inputs and outputs
- > Built-in yearly program timer for scheduled broadcasting
- > Continuous speaker line monitoring without interruption of BGM or paging announcements
- > System status can be confirmed on Remote Microphone
- > Simultaneous 2-channel recorded message broadcasts
- > Convenient multi-language software for easy configuration and settings included

Maximum System Capacity

| | |
|-----------------------|----------|
| Output Power | 40,000 W |
| Speaker Zones | 80 |
| Remote Mic connection | 8 |



Certificate No: 1134-CPR-110



VX-2000 series

VX-2000 series System Manager



VX-2000

- Functions as the VX-2000 System Manager
- Input matrix unit that assigns input signals to 4 audio buses
- Up to 8 units of input modules can be mounted in the System Manager
- The VX-2000 can control audio signal routing, priorities, and contacts to peripheral equipment
- Input and output control settings are configured by way of a PC software
- Up to 2,000 system events can be logged and viewed from a PC
- Rack-mountable, 3 units height

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 |
|------------------------|--|
| Applicable Model | VX-2000DS, VX-3000DS |
| Power Source | 24 V DC (operating range: 20 – 40 V DC) |
| Current consumption | Under 650 mA (20 V DC) |
| Number of module slots | 8 |
| Audio Link Output | Number of audio buses: 4, 0 dB V, electronically balanced, RJ45 female connector |
| Monitor Output | 0 dB V, electronically balanced, XLR receptacle (3 pins) |
| Frequency Response | 20 Hz – 20 kHz |
| Distortion | Under 0.5% |
| Signal-to-noise Ratio | Over 60 dB |
| Cross Talk | Under -60 dB (1 kHz, 0 dB V) |
| Controls | 16 inputs, RJ45 connector x 2 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 |
| Finish | Panel: Surface-treated steel plate, black, 30% gloss, paint |
| Dimensions (W x H x D) | 482 x 132.6 x 337 mm (19", 3U) |
| Weight | 6.4 kg |

VX-2000 series Surveillance Frame



VX-2000SF

- Surveillance Frame is the output matrix section of the VX-2000 system
- A total of 10 modules and control modules can be installed
- Assigns audio signals to individual zones from 4 audio buses
- Expandable to up to 8 units
- Rack-mountable, 3 units height
- In case of power amplifier failure, output is automatically switched to the standby amplifier
- Output volume setting with PC system software
- 7 types of modules can be used (please see options)

Options

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

Specifications

| | VX-2000SF |
|------------------------------|--|
| Applicable Model | VX-2000DS, VX-3000DS |
| Power Source | 24 V DC (operating range: 20 – 40 V DC) |
| Current Consumption | Under 2 A (40 V DC) |
| Number of Module Slot | 10, usable modules: VX-200SZ, VX-200SZ-2, VX-200SP, VX-200SP-2, VX-200SP-ANC, VX-200SI, VX-200SO |
| Frequency Response | 20 Hz – 20 kHz (when use VX-200SZ / VX-200SZ-2: 120 Hz – 20 kHz) |
| Distortion | Under 0.5% |
| Signal-to-Noise Ratio | Over 60 dB |
| Cross Talk | Under -60 dB (1 kHz, 0 dB V) |
| Audio Link Input / Output | Number of audio buses: 4, 0 dB V, electronically balanced, RJ45 female connector |
| Standby Amplifier connection | RJ45 female connector for connecting the VP-3154, VP-3304, VP-3504, VP-2064, VP-2122, VP-2241, VP-2421 Power Amplifier |
| Connector | VX-2000 / VX-2000SF: RJ45 female connector x 2, LONWORKS RS-485 VX-2000DS: RJ45 connector x 2 |
| Finish | Panel: Surface-treated steel plate, black, 30% gloss, paint |
| Dimensions (W x H x D) | 482 x 132.6 x 337 mm (19", 3U) |
| Weight | 5.6 kg |

VX-2000 series System Amplifier



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

- > 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 switch over
- > Power Amplifier uses 1 VP-200VX or VP-200VX-BGM Power Amplifier Input Module per channel
- > Programmable power amplifier standby function extends battery-powered operation time in emergency cases

Options

- > VP-200VX: Amplifier Input Module
- > VP-200VX-BGM: Amplifier Input Module with additional input for BGM

| Specifications | VP-2064 | VP-2122 | VP-2241 | VP-2421 |
|-------------------------------|---|--|--|---|
| Applicable Model | VX-2000DS, VX-3000DS, System VX-2000 / SX-2000 | | VX-2000DS, VX-3000DS, System VM-3000 / VX-2000 / SX-2000 | |
| Power Source | 28 VDC (operating range: 20 – 40 VDC) M4 screw terminal | | | |
| Current Consumption (EN60065) | 4.8 A in total | | | 7.6 A |
| Rated Output Power | 4 x 60 W | 2 x 120 W | 1 x 240 W | 1 x 420 W |
| Output Voltage/Impedance | 167 Ω (100 V line), 83 Ω (70 V line), 41 Ω (50 V line) (selectable by the internal wiring change) | 83 Ω (100 V line), 41 Ω (70 V line), 21 Ω (50 V line) (selectable by the internal wiring change) | 41 Ω (100 V line), 21 Ω (70 V line), 10 Ω (50 V line) (selectable by the internal wiring change) | 24 Ω (100 V line), 12 Ω (70 V line), 6 Ω (50 V line) (selectable by the internal wiring change) |
| Number of Channels | 4 | 2 | 1 | |
| Input | Specified by input module VP-200VX | | | |
| Number of Module Slots | 4, usable module: VP-200VX / VP-200VX-BGM | 2, usable module: VP-200VX / VP-200VX-BGM | 1, usable module: VP-200VX / VP-200VX-BGM | |
| Output | Power amplifier output (speaker line): M3.5 screw terminal | | | |
| Frequency Response | 40 Hz – 16 kHz, ±3 dB (at 1/3 rated output) | | | |
| Distortion | Under 1% (at rated output, 1 kHz) | | | |
| Signal-to-noise Ratio | Over 80 dB | | | |
| Panel Indicator | Channel power indicator: 4 channels, dual Colour LED Overheat indicator: Yellow LED | | | |
| Finish | Panel: Surface-treated steel plate, black, 30% gloss, paint | | | |
| Dimensions (W x H x D) | 482 x 88.4 x 340.5 mm (19", 2U) | | | |
| Weight | 11.2 kg | 9.1 kg | 8.1 kg | 9.5 kg |

VX-2000 series Digital Power Amplifier



VP-3154 / VP-3304 / VP-3504

- > System amplifier for VX-2000 and SX-2000
- > 3 different power configurations:
 - 150 W x 4 Channels (VP-3154)
 - 300 W x 4 Channels (VP-3304)
 - 500 W x 4 Channels (VP-3504)
- > Usable as standby amplifier for emergency switch over
- > Compact, lightweight and energy efficient
- > 4 amplifier input modules are built-in
- > With BGM input ports
- > Usable with VX-3000DS, system VX-2000 / SX-2000

| Specifications | VP-3154 | VP-3304 | VP-3504 |
|-----------------------------|--|---|--|
| Applicable Model | VX-3000DS, System VX-2000 / SX-2000 | | |
| Power Source from VX-3000DS | 31 VDC (operating 20 – 34 VDC) DC power in: M4 screw terminal | | |
| Amplification System | Class D | | |
| Current Consumption | 6 A (Rated Output Power), 0.6 A (Surveillance), 0.1 A (Standby), at 31 VDC, 100 V line, each channel | 9 A (Rated Output Power), 0.6 A (Surveillance), 0.1 A (Standby) at 31 VDC, 100 V line, each channel | 13 A (Rated Output Power), 0.6 A (Surveillance), 0.1 A (Standby) at 31 VDC, 100 V line, each channel |
| Rated Output Power | 150 W x 4 (at 100 V line) 105 W x 4 (at 70 V line) 75 W x 4 (at 50 V line) | 300 W x 4 (at 100 V line) 210 W x 4 (at 70 V line) 150 W x 4 (at 50 V line) | 500 W x 4 (at 100 V line) 350 W x 4 (at 70 V line) 250 W x 4 (at 50 V line) |
| Output Voltage | 100 V (70 V, 50 V: selectable by internal change) | | |
| Minimum Resistive Load | 67 Ω (at 100 V line), 47 Ω (at 70 V line), 33 Ω (at 50 V line) | 33 Ω (at 100 V line), 23 Ω (at 70 V line), 17 Ω (at 50 V line) | 20 Ω (at 100 V line), 14 Ω (at 70 V line), 10 Ω (at 50 V line) |
| Maximum Capacitive Load | 500 nF | | |
| Number of Channels | 4 | | |
| Input | PA link: 4 channels, RJ45 connector, BGM: 4 channels, removable terminal block (5 pins) BGM INPUT (H, C, E): -10 dB/0 dB (LINE, changeable), 22 kΩ, electronically balanced BGM MUTE (G, +): no-voltage make contact input, open voltage: 15 VDC, short-circuit current: 2 mA, Volume adjustment: 4 channels | | |
| Output | PA out (speaker line): removable terminal block (9 pins) x 1 | | |
| Frequency Response | 40 Hz – 16 kHz, ±3 dB (at 100 V line, 1/3 rated output) | | |
| Distortion | 1% or less (at 100 V line, rated output, 1 kHz) | | |
| Signal-to-noise Ratio | 80 dB or more (at 100 V line, A-weighted) | | |
| Crosstalk | 60 dB or more (at 100 V line, A-weighted) | | |
| Panel Indicator | Power indicator x 4 (Green), Operate indicator x 4 (Green), Input signal indicator x 4 (Green), Peak signal indicator x 4 (Red) | | |
| Operating Temperature | -5 °C to +45 °C | | |
| Operating Humidity | 90% RH or less (no condensation) | | |
| Finish | Panel: Surface-treated steel plate, black, 30% gloss, paint | | |
| Dimensions (W x H x D) | 482 x 88.4 x 390 mm (19", 2U) | | |
| Weight | 7.3 kg | 7.7 kg | |

VX-2000 series Emergency Power Supply



VX-2000DS

- > Supplies the DC power to each component in the VX-2000 system by means of the VX-200PS Power Supply Unit
- > Keeps the batteries charged
- > Ambient temperature controlled charging voltage
- > Matching battery: 2 x 12 V sealed lead batteries
- > Automatically switch-over in case of AC mains failure
- > EN 54-4 certified, Certificate No: 1134-CPR-083

Specifications

| | VX-2000DS |
|-------------------------|---|
| Applicable Model | System VM-3000 / VX-2000 / SX-2000, not the VP-3000 Series amplifier |
| Power Source | 230 V AC, 50/60 Hz |
| Power Consumption | 240 W max. |
| Applicable Battery | Panasonic LC-X1265PG / APG (65Ah) (12 V x 2 or 4) |
| Charging Method | Trickle charging |
| Charging Current | 5 A max |
| Charging Output Voltage | 27.3 V \pm 0.3 V (at 25 °C) Temperature correction coefficient: -40 mV/°C |
| Power Supply Input | 6 / M4 screw terminal |
| 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 0 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 (19", 2U) |
| Weight | 10.5 kg |

VX-2000 Serie Power Supply



VX-200PS

- > Power Supply Frame
- > 2 DC output channels per unit
- > EN 54-4 certified, Certificate No: 1134-CPR-083

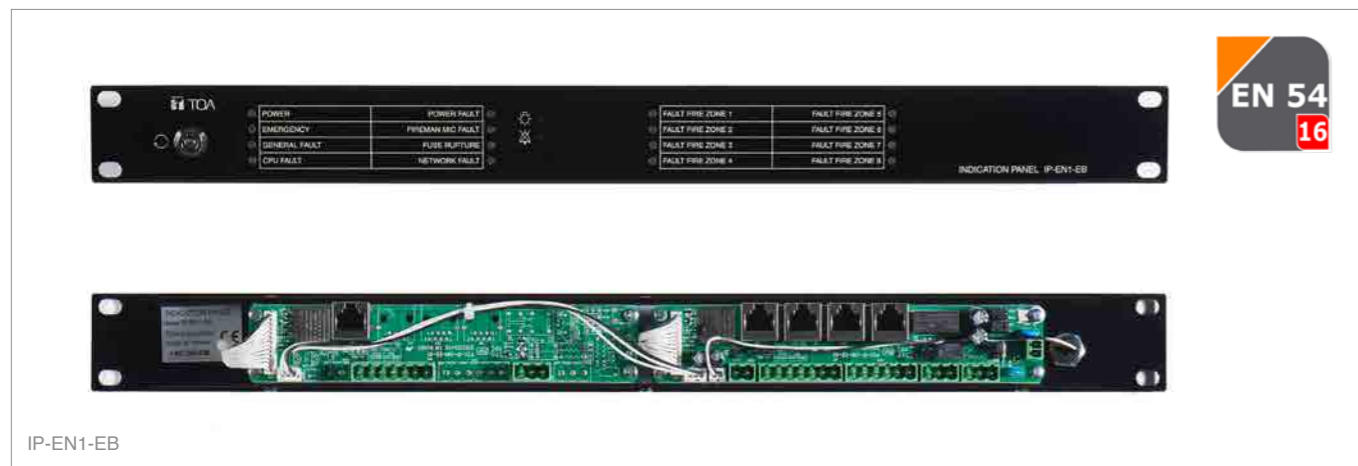
VX-2000PF

- > VX-2000PF frame for rack mounting of up to 3 VX-200PS Power Supply Units
- > EN 54-16 certified, Certificate No: 1134-CPR-110

Specifications

| | VX-200PS | VX-2000PF |
|------------------------|---|---|
| Applicable Model | VX-2000DS | VX-200PS |
| Power Source | 230 V AC, 50/60 Hz | - |
| Power Consumption | 580 W | - |
| DC Power Output | Rated output: 210 W (29 V, 7.25 A) x 2, Peak output: 400 W x 2, M4 screw terminal | - |
| Operating Temperature | 0 °C to +40 °C | - |
| Finish | Surface-treated steel plate | Panel: Surface-treated steel plate, black, 30% gloss, paint |
| Dimensions (W x H x D) | 135 x 118.2 x 324.8 mm | 483 x 132.6 x 324.8 mm (19", 3U) |
| Weight | 13.2 kg | 5.5 kg |

VX-2000 series Status Indication Panel



IP-EN1-EB

- > Status indication panel for the mandatory indications required by EN 54-16: emergency mode, general fault, fuse rupture, power fault, emergency microphone fault, network fault, CPU fault
- > With indication of faults in 8 fire areas (EN 54-16 option)
- > Emergency control input from fire detection system
- > General fault output allows surveillance by the fire detection system
- > For VX-2000 and SX-2000 systems

| Specifications | IP-EN1-EB |
|-------------------------|--|
| Applicable Model | VX-2000 system, SX-2000 system |
| Operation Voltage Range | 20 – 40 VDC |
| Current Consumption | max. 60 mA |
| Control Input | Emergency activation, Emergency reset, Silence |
| Activation | Contact: break, make; voltage: on, off |
| Contact Control | Open voltage: 24 VDC, make current: 12 mA |
| Voltage Control | 12 VDC, 12 mA (1 kΩ) / 24 VDC, 12 mA (2 kΩ) |
| General Fault | Potential-free NO and NC contacts, resistors can be added for surveillance |
| Switch Capacity | max. 40 VDC, max. 100 mA |
| Connectors | Removable screw terminals, RJ45 jacks |
| Finish | Aluminium, black |
| Dimensions (W x H x D) | 483 x 44 x 47 mm (19", 1U) |
| Weight | 470 g |

VX-2000 series Audio Network Adapter / Ethernet Switches



NX-100S

- > Audio network adapter for transmitting audio and control signals via LAN
- > Transmission to up to 64 NX-100S simultaneously
- > Allows de-centralised installation of the VX-2000 system

IES-3000 Series Ethernet Switches

- > Managed Ethernet Switches
- > Several redundancy modes: STP, RSTP, ring
- > Mounting on DIN rail

Options

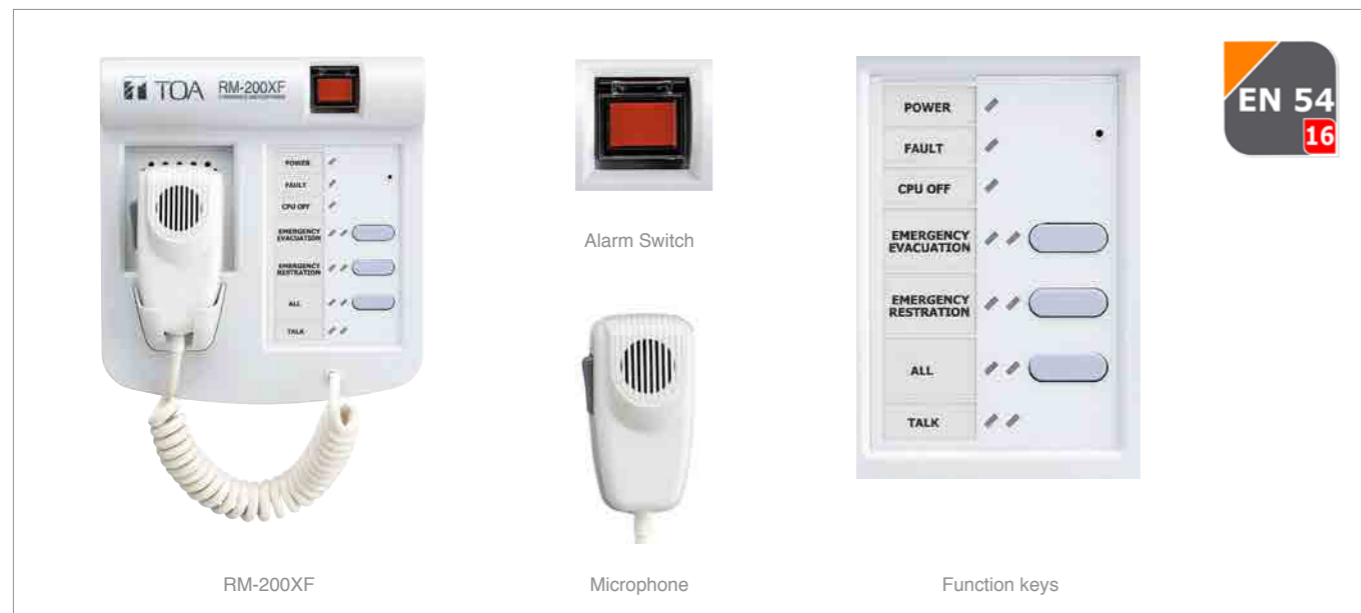
For installation in cabinet racks:

- > MB-15B-BK (installation of one unit)
- > MB-15B-J (installation of two units)

| Specifications | NX-100S |
|------------------------|--|
| Applicable Model | VX-2000 system |
| Supply Voltage | 24 VDC |
| Current Consumption | 200 mA |
| Audio Input | balanced, sensitivity -58/0 dBV selectable |
| Audio Output | balanced, 0 dBV, min. 600 Ω |
| Control Inputs | 8 (12 VDC, 10 mA) |
| Control Outputs | 8 (open collector, 30 VDC, 50 mA) |
| Network Connection | RJ45, 10BASE-T/100BASE-TX, automatic |
| Finish | Steel plate, painted black |
| Dimensions (W x H x D) | 210 x 44.7 x 188 (1/2 19", 1U) |

| Specifications | IES-3080 | IES-3062GT | IES-3062FX-MM-SC | IES-3062GF-MM-SC | IES-3062FX-SS-SC | IES-3062GF-SS-SC |
|--------------------------|---|--|---|------------------------------------|----------------------------------|-----------------------------------|
| Applicable Model | VX-2000 system, SX-2000 system | | | | | |
| Supply Voltage | 12 - 45 VDC, 2 redundant inputs, removable screw terminal | | | | | |
| Power Consumption (typ.) | 5W | 8W | 9W | 7W | 9W | 7W |
| Network Ports | 8 x RJ45, 10/100TX | 6 x RJ45, 10/100TX, 2 x RJ45 1000 Base-T | 6 x RJ45, 10/100TX, 2 x SC, 100FX | 6 x RJ45, 10/100TX, 2 x SC, 1000SX | 6 x RJ45, 10/100TX 2 x SC, 100FX | 6 x RJ45, 10/100TX 2 x SC, 1000LX |
| Fiber optical cable type | - | - | Multi-mode (850 nm, 50/125 μm to 62.5/125 μm) | | Single-mode (1310 nm (9/125 μm)) | |
| Max. Cable Length | RJ45: 100 m | | RJ45: 100 m, SC: 2 km | RJ45: 100 m, SC: 550 m | RJ45: 100 m, SC: 30 km | RJ45: 100 m, SC: 10 km |
| Fault Output | NO contact, 24 VDC, 1 A, removable screw terminal | | | | | |
| Dimensions (B x H x T) | 56 x 144.3 x 106.1 mm | | | | | |
| Weight | 710g | 722g | 735g | 740g | 735g | 740g |

VX-2000 series Emergency Remote Microphone



RM-200XF

- > 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 or RM-320F
- > 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
- > RM-320F: Extension Unit
- > WB-RM200: Wall-mounting bracket

Specifications

| | RM-200XF |
|--------------------------------|--|
| Applicable Model | VX-200XR in VX-2000, RM-210, RM-320F |
| Power Source | 24 VDC (operating range: 16 – 40 VDC) |
| Current Consumption | Under 200 mA (RM-200XF), 850 mA (with 10 RM-210s connected) |
| Audio Output | 0 dBV, 600 Ω, balanced |
| Hand-Held Microphone | Dynamic microphone, function switch (default: press-to-talk), microphone element fault detection |
| Frequency Response | 200 Hz – 15 kHz |
| Signal-to-noise Ratio | Over 55 dB |
| Functions | Internal monitor speaker 200 mW / Volume control: microphone, monitor speaker |
| Operation Keys | 5 (including hand-held microphone's switch), extendable up to 105 (with 10 RM-210s connected) |
| Key Extension | Max. 10 RM-210 or 5 RM-320F, 10 keys per RM-210, 20 keys per RM-320F |
| Communication | System: LONWORKS twisted pair free topology transceiver, Distance: max. 500 m (Free topology wiring) |
| Connection Cable and Connector | Category 5 STP cable, plug-in screw connector |
| Finish | ABS resin, bluish gray (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

- > For emergency broadcast and general purpose broadcast applications
- > PC-programmable system software permits desired functions to be assigned to individual function keys (equipped with 2 LED indicators)
- > Up to 8 in total of RM-200X and RM-200XF units can be connected within one system

RM-210

- > Key extension unit with 10 additional keys
- > Up to 9 RM-210 Remote Microphone Extension Units can be used with each RM-200X Remote Microphone

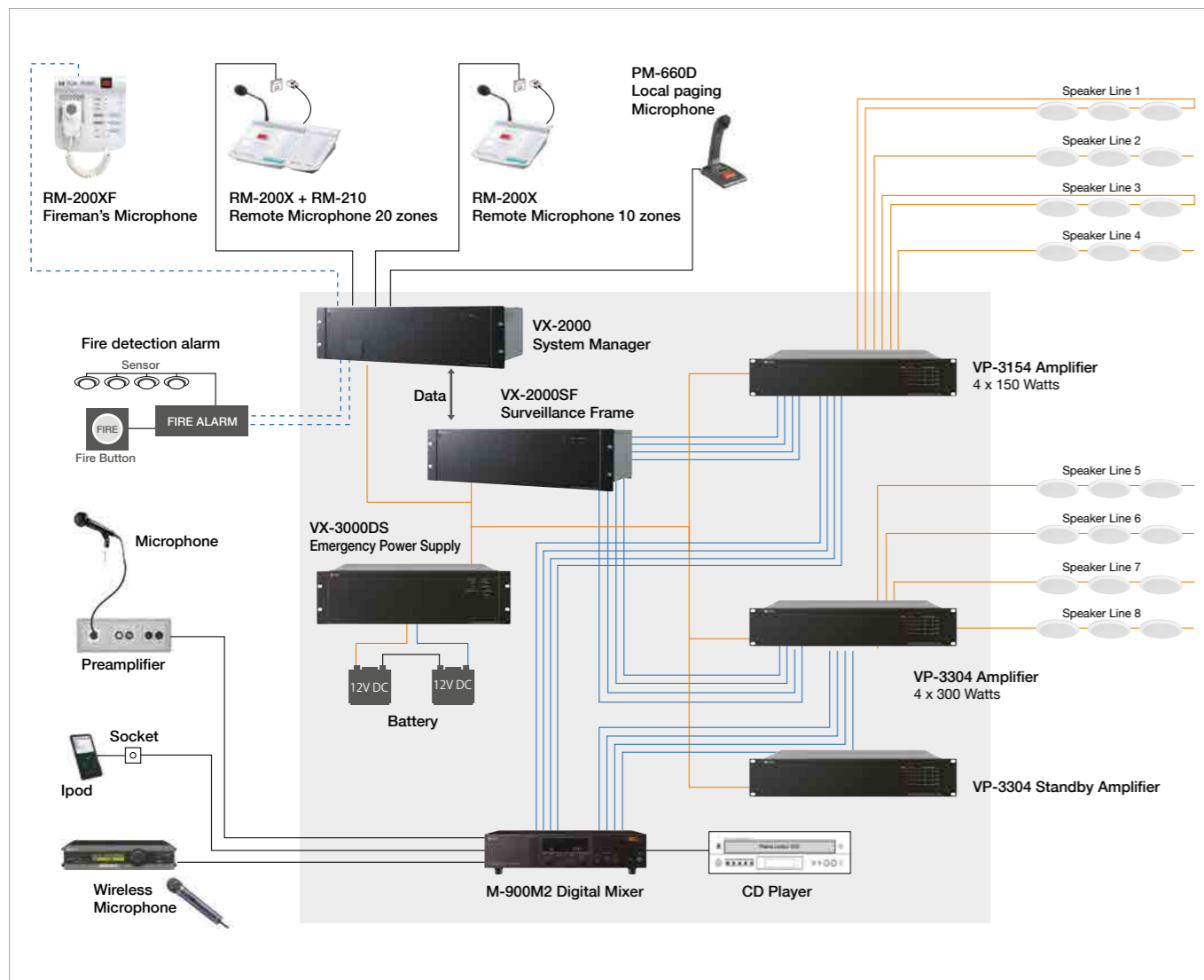
Options

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

Specifications

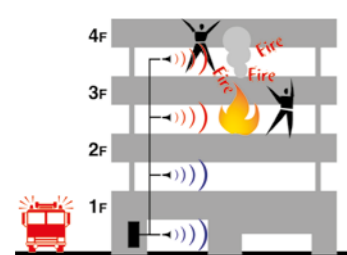
| | RM-200X | RM-210 |
|--------------------------------|---|--|
| Applicable Model | VX-200XR in VX-2000, RM-210 | RM-200M, RM-200X, RM-200XF, RM-200SA, RM-200SF |
| Power Source | 24 VDC (operating range: 16 – 40 VDC), supplied from RJ45 connector or power input jack (non-polarity type) | From remote microphone |
| Current Consumption | Under 200 mA (RM-200X), 750 mA (with 9 RM-210s connected) | 75 mA max. (from remote microphone) |
| Audio Output | 0 dBV, 600 Ω, balanced, RJ45 connector | - |
| External Microphone Input | -40 dBV, 2.2 kΩ, unbalanced, mini jack, phantom powering | - |
| Frequency Response | 100 Hz – 20 kHz | - |
| Distortion | Under 1 % | - |
| Signal-to-noise Ratio | Over 60 dB | - |
| Internal Monitor Speaker | 200 mW | - |
| Volume Control | Microphone volume control, Monitor speaker volume control | - |
| Key Extension | Max. 9 RM-210 | 10 keys, freely assignable |
| 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 way of dedicated cable | Connection with dedicated cable |
| Finish | ABS resin, bluish gray (PANTONE 538 or its equivalent) | ABS resin, bluish gray (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 |

VX-2000 series System Configuration



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.

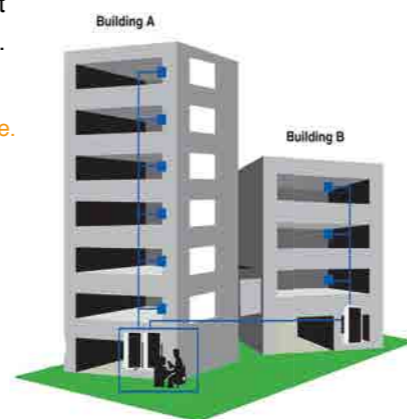


*A maximum of 2 broadcasts are simultaneously possible.

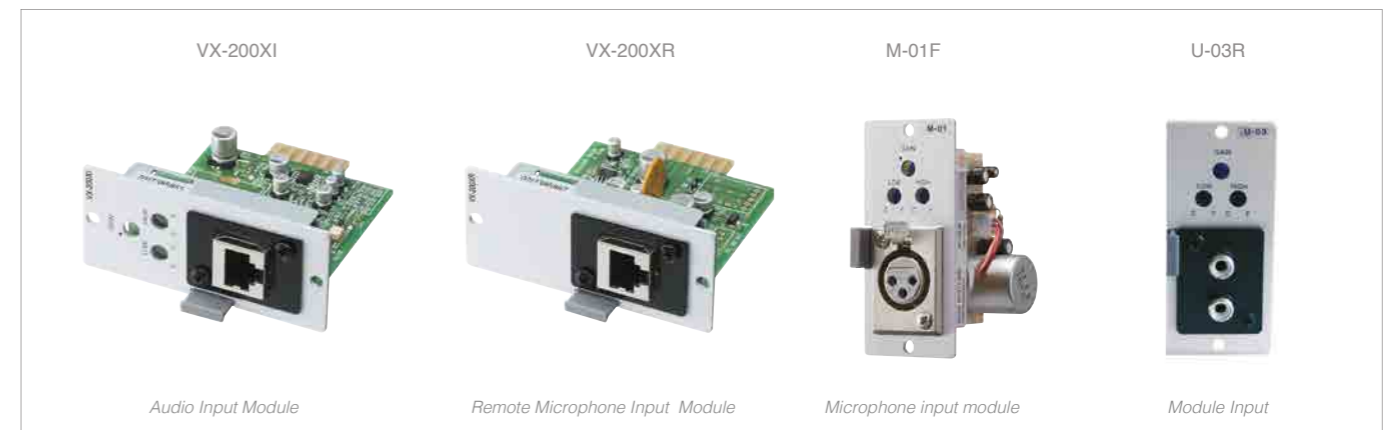
(2 EV-200M voice announcement boards installed in the VX-2000)

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-2000 series Modules for VX-2000



VX-200XI

- > 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

VX-200XR

- > Remote Microphone Input Module for RM-200X Remote Microphone or RM-200XF Fireman's Microphone

M-01F

- > Phantom power
- > Balanced, low impedance
- > Filter: High pass, low pass
- > Connector: XLR

U-03R / U-01F / U-01S

- > U-03R: Module Input (RCA connector)
- > U-01F: Module AUX Input (XLR connector)
- > U-01S: Module Input (Phoenix connector)

Specifications

| | VX-200XI | VX-200XR | M-01F | U-03R / U-01F / U-01S |
|-------------------------|--|----------------------|--------------------|-----------------------------|
| Power Source | Supplied from VX-2000 | | | |
| Input Impedance | - | - | 600 Ω, balanced | - |
| Current Consumption | Under 30 mA | Under 17 mA | 9 mA | Under 8 mA |
| Frequency range | - | - | 25 Hz – 20 kHz | 20 Hz – 20 kHz |
| 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 | - | -60 dBV | 100 – 3,600 mV (adjustable) |
| Control Input | No-voltage make contact, open voltage: 17 V DC, short circuit current: Under 5 mA | - | - | - |
| Finish | Panel: Aluminium, hairline | | Front: Steel plate | |
| Dimensions (W x H x D) | 35 x 78 x 88 mm | | | |
| Weight | 70 g | 70 g | 110 g | approx. 75 g |

VX-2000 series Modules for VX-2000SF



VX-200SZ

- > Impedance Detection Module is an audio signal output module
- > Speaker line impedance detection
- > Detection of speaker line short circuits, open circuits and ground fault

VX-200SZ-2

- > 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

VX-200SP

- > Pilot Tone Detection Module
- > Audio signal output module with speaker line pilot tone detection
- > Detection of speaker line short circuits, open circuits and ground fault

Specifications

| | VX-200SZ | VX-200SZ-2 | VX-200SP |
|------------------------|--|--|------------------------------------|
| Power Source | Supplied from VX-2000SF | | |
| Current Consumption | Under 150 mA | Under 170 mA | Under 100 mA |
| Power Amplifier Link | RJ45 female connector for connecting the VP-3154, VP-3304, VP-3504, VP-2064, VP-2122, VP-2241, VP-2421 Power Amplifier | | |
| Control Output | Transfer type, withstand voltage: 30 VDC, 250 V AC, contact current: under 7 A | | |
| Speaker Output | Plug-in screw connector, AWG 24-22 | 2 outputs (A, B), plug-in screw connector, AWG 24-16 | Plug-in screw connector, AWG 24-16 |
| Power Amplifier Input | Plug-in screw connector for connecting the VP-3154, VP-3304, VP-3504, VP-2064, VP-2122, VP-2241, VP-2421 Power Amplifier | | |
| Fault Detection System | Short circuit, open circuit (pilot tone detection method), ground fault | | |
| Finish | Panel: Surface-treated steel plate | | |
| Dimensions (W x H x D) | 30.5 x 132.6 x 290.3 mm | | |
| Weight | 320 g | 335 g | 240 g |

VX-2000 series Modules for VX-2000SF



VX-200SP-2

- > Consists of Pilot Tone Detection Module + End of Line Module
- > Similar to the VX-200SP's features
- > Shielded cable must be used for the speaker line

VX-200SP-ANC

- > Line surveillance by pilot tone with cable return
- > Detection of speaker line short circuits, open circuits and ground fault
- > Ambient noise controller for adjusting the output volume according to the ambient noise
- > Automatic switch-over to standby amplifier

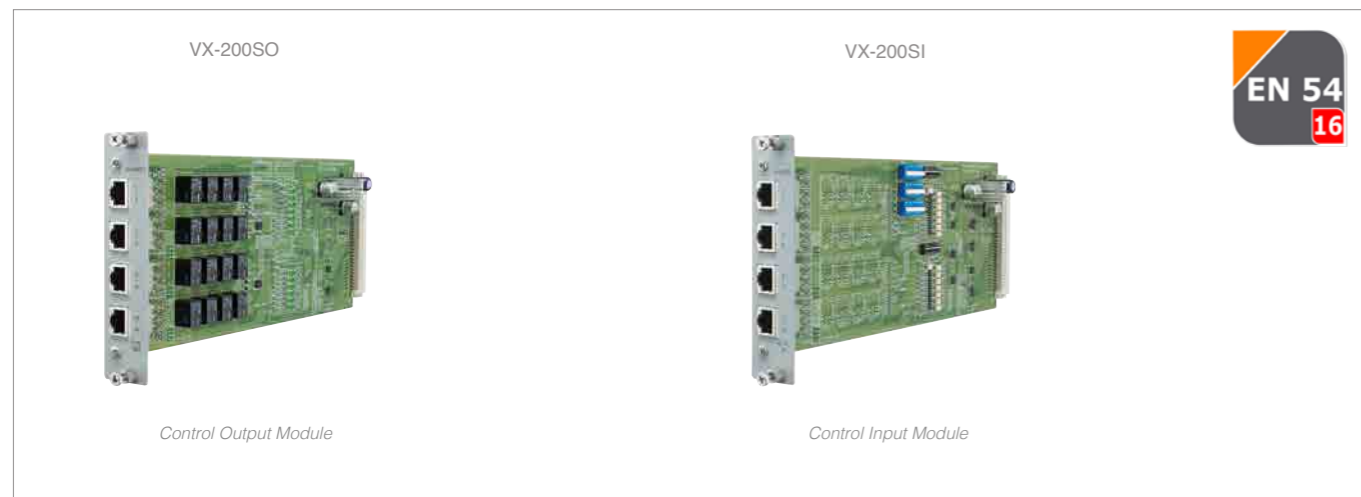
VX-200SE

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

Specifications

| | VX-200SP-2 | VX-200SP-ANC | VX-200SE |
|------------------------------|--|-------------------------------------|---|
| Power Source | Supplied from VX-2000SF | | Supplied from VX-200SZ, VX-200SP |
| Current Consumption | Under 100 mA | Under 130 mA | Under 50 mA |
| Power Amplifier Link | RJ45 female connector for connecting the VP-3154, VP-3304, VP-3504, VP-2064, VP-2122, VP-2241, VP-2421 Power Amplifier | | - |
| Line Monitor | Plug-in screw connector | | - |
| 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 |
| External Attenuator | Plug-in screw connector, relay, no-voltage make contact output | | - |
| Control Output | Transfer type, withstand voltage: 30 VDC, 250 V AC, contact current: under 7 A | | - |
| Fault Detection System | Short circuit, open circuit (pilot tone detection method), ground fault | | - |
| Volume Control Range | - | 21 dB | - |
| Attack Time | - | 2 sec, 10 sec, 1 min. (selectable) | - |
| Audio Input | - | Bal., -10/-20 dBV, 10 kΩ | - |
| Sensor Input | - | -38 dBV ~ -2 dBV, phantom p. 17 VDC | - |
| Finish | Panel: Surface-treated steel plate | | - |
| Dimensions (W x H x D) | 30.5 x 132.6 x 290.3 mm | | 110 x 90 x 21.4 mm |
| Weight | 260 g (incl. end of line module) | 520 g | 50 g |
| End Of Line Unit (Accessory) | Power supplied from the VX-200SP-2, speaker line connection: Plug-in connector, weight: 22 g | - | - |

VX-2000 series Modules for VX-2000SF



VX-200SO

- > Increases the number of control outputs in the VX-2000 system
- > 16 control outputs
- > No-voltage, make contact to external equipment depending on the event
- > Up to 128 control outputs per system

VX-200SI

- > 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

Specifications

| | VX-200SO | VX-200SI |
|------------------------|---|--|
| Power Source | Supplied from VX-2000SF | |
| Current Consumption | Under 150 mA | Under 100 mA |
| Control Output | 16 outputs, no-voltage make contact contact capacity: 28 VDC, 1 A, RJ45 connector | 16 inputs, no-voltage make contact, open voltage: 24 VDC, short-circuit current: under 10 mA, 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 |
| Weight | 250 g | 200 g |

VX-2000 series Modules



VP-200VX

- > 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

- > In comparison to VP-200VX the VP-200VX-BGM features additional BGM input plus muting

EV-200M

- > Sound Repeater Module for VX-2000
- > Up to 8 messages, can be used for Alert & Evacuation, general messages or music
- > Includes compact memory flash card
- > Single source playback
- > Distortion: under 0.3% (44.1 kHz, recording method: Extremely high)

Specifications

| | VP-200VX | VP-200VX-BGM | EV-200M |
|------------------------|--|--|------------------------------------|
| Power Source | Supplied from amplifier (VP-2064, VP-2122, VP-2241, VP-2421) | | 24 VDC (by VX-2000 system) |
| Power Consumption | Under 30 mA | Under 35 mA | 0.2 A |
| Frequency Response | 20 Hz – 20 kHz | 20 Hz – 20 kHz (RJ45) 100 Hz – 20 kHz (program input) | 20 Hz – 20 kHz (44.1 kHz sampling) |
| Finish | Panel: Surface-treated steel plate | | - |
| Dimensions (W x H x D) | 88 x 25.8 x 53.2 mm | | 120 x 18.6 x 121 mm |
| Weight | 50 g | 60 g | 120 g |



SX-2000 series Network Enabled for Extended System Installations

Description

The SX-2000 is a scalable system for configuring versatile and highly effective PA systems. The system features new matrix 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.

System Configuration

The basic system comprises one SX-2100AI Audio Input Unit, one SX-2000AO or SX-2100AO 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 that keeps the system in operation 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.

Features

- > Network-base sound system
- > Max. 64 audio inputs and 256 outputs with 16 bus lines
- > Max. 1,416 control inputs and outputs for system integration
- > Built-in DSP function, event logger and surveillance of amplifiers and speaker lines
- > Max 1,536 zones in combination with VM-3000
- > Max 2,048 zones in combination with TOA's N-8000 series IP Intercom System

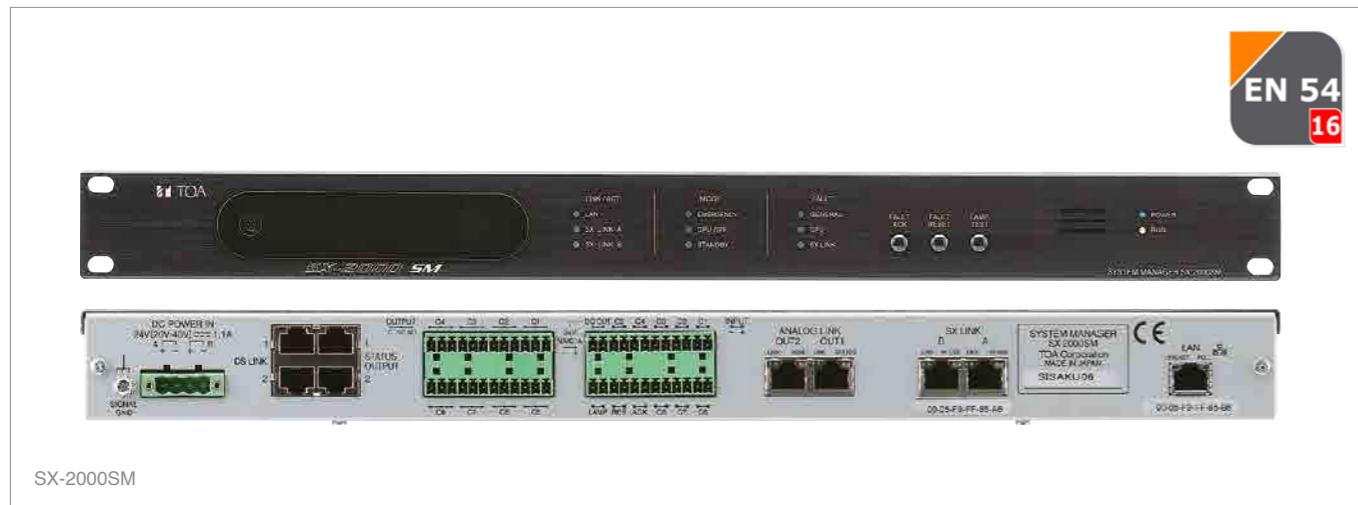
| Maximum System Capacity | |
|-------------------------|-----------|
| Output Power | 128,000 W |
| Speaker Zones | 256 |
| Remote Mic connection | 64 |



Certificate No: 1134-CPR-102



SX-2000 series System Manager



SX-2000SM

- > 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

| Specifications | SX-2000SM |
|------------------------|--|
| Applicable Model | VX-2000DS, VX-3000DS |
| Power Source | 24 V DC; 2 power inputs |
| Current Consumption | Under 0.8 A |
| SX Link Network I/F | 2 x 100 BASE-TX circuits |
| 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: Aluminum, black, alumite, case: Surface-treated steel plate |
| Dimensions (W x H x D) | 482 x 44 x 333 mm (19", 1U) |
| Weight | 3.8 kg |

SX-2000 series Audio Input Unit



SX-2100AI

SX-2100AI

- > Modular audio input
- > 2 to 8 audio 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

| Specifications | SX-2100AI |
|--------------------------------------|---|
| Applicable Model | VX-2000DS, VX-3000DS |
| Power Source | 24 V DC (2 independent power inputs) |
| Current Consumption | Under 1.5 A (when operated on 24 V DC) |
| Audio Inputs | 8 inputs, for up to 4 modules |
| Audio Input Characteristics | Sampling frequency: 48 kHz |
| Analog Link Input / Output Connector | 1 input, 1 output, CAT5-STP, max. cable length 800m, 2 x RJ45 connector |
| SX Link Network I/F | 2 x 100 Base-TX CAT5-STP, maximum cable length 100m to hub |
| Operating Temperature | 0°C to +40°C |
| Finish | Panel: Aluminum, black, alumite, case: Surface-treated steel plate |
| Dimensions (W x H x D) | 482 x 88.4 x 349 mm (19", 2U) |
| Weight | 7 kg |

SX-2000 series Input Modules for SX-2100AI



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SX-2100AI (Rear)



SX-200RM Remote Microphone Interface Module

- > Can be used to connect two remote microphones
- > Input sensitivity can be adjusted

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Specifications

| | SX-200RM |
|---------------------------|---|
| Power Source | Supplied from SX-2100AI |
| Input | 2 x RJ45 connector for remote microphones |
| A/D Converter | 24 bits |
| Frequency Response | 20 Hz – 20 kHz, ± 1 dB |
| Sampling Frequency | 48 kHz |
| Dynamic Range | > 100 dB (IHF-A weighted) |
| Total Harmonic Distortion | < 0.05% |
| Finish | Panel: Pre-coated steel plate, black, 30% gloss |
| Dimensions (W x H x D) | 35 x 119.5 x 178.4 mm |
| Weight | 190 g |



SX-200IP IP Interface Module

- > Module for mounting in the SX-2100AI, RJ45 connectors
- > Enable paging announcement from the N-8000 Series stations (N-8600MS and N-8610RM) to the SX-2000 System

Specifications

| | SX-200IP |
|------------------------|--|
| Network Section | Network I/F: 10BASE-T/100BASE-TX (Automatic-Negotiation) Network Protocol: TCP/IP, UDP, HTTP, RTP, ARP, ICMP, IGMP Voice sampling frequency: 16 kHz, 8 kHz (controllable on the software) Voice packet loss recovery: Silence insertion Audio delay time: 80 ms, 320 ms (controllable on the software) |
| Indicator | Operation indicator (RUN) |
| Finish | Panel: Pre-coated steel plate, black, 30% gloss |
| Dimensions (W x H x D) | 35 x 119.5 x 178.4 mm |
| Weight | 150 g |

SX-2000 series Input Modules for SX-2100AI



D-921E

Mic/Line Input Module (24 bits monaural type)

- > 2-channel microphone/line input module designed for use with the SX-2100AI
- > Equipped with removable terminal block type connectors



D-921F

Mic/Line Input Module (24 bits monaural type)

- > 2-channel microphone/line input module designed for use with the SX-2100AI
- > Equipped with XLR connectors



D-922E

Mic/Line Input Module (20 bits monaural type)

- > 2-channel microphone/line input module designed for use with the SX-2100AI
- > Equipped with removable terminal block type connectors



D-922F

Mic/Line Input Module (20 bits monaural type)

- > 2-channel microphone/line input module designed for use with the SX-2100AI
- > Equipped with XLR connectors



D-936R

Stereo Select Input Module

- > 4 stereo input module designed for use with the SX-2000AI
- > Equipped with standard RCA pin jacks

SX-2000 series Audio Output Unit



SX-2000AO

- > 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 24 V emergency cut-off input
 - > 2 power inputs for dual-redundant power supply system
 - > For public address applications

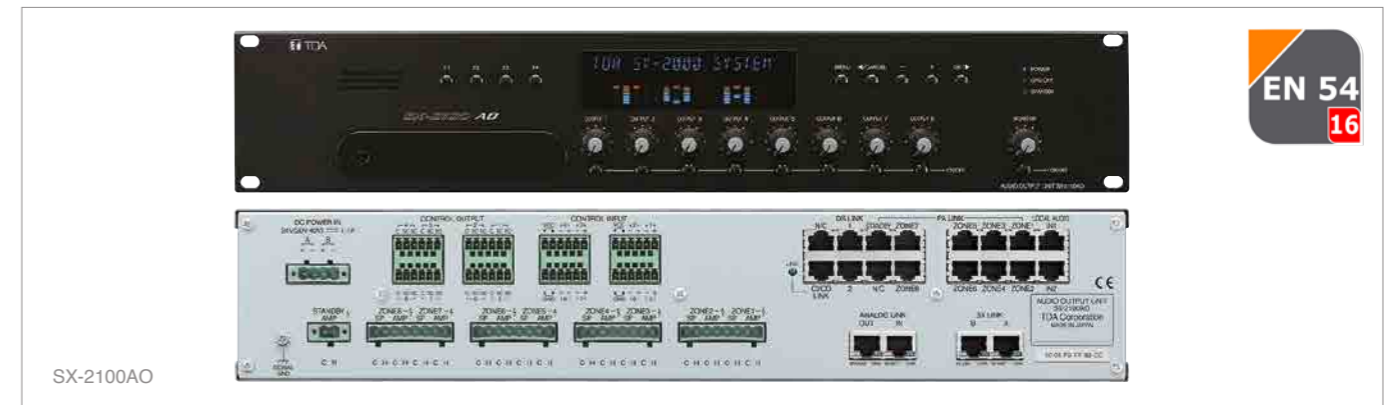
Options

- > SX-2000CI: Control Input Unit
- > SX-2000CO: Control Output Unit
- > DA-250DH: Digital 2 Channel Amplifier 100 V
- > DA-250FH: Digital 4 Channel Amplifier 100 V
- > DA-550FH: Digital 4 Channel Amplifier 100 V
- > DA-250D: Digital 2 Channel Amplifier 4/8 Ω
- > DA-250F: Digital 4 Channel Amplifier 4/8 Ω
- > DA-550F: Digital 4 Channel Amplifier 4/8 Ω

Specifications

| | SX-2000AO |
|--------------------------------|--|
| Applicable Model | VX-2000DS, VX-3000DS |
| Power Source | 24 VDC (operating range: 20 – 40 VDC from VX-200PS) |
| Current Consumption | Under 0.79 A |
| Audio Output | 8 outputs, 0 dBV, load: 600 Ω 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 circuits with RJ 45 connector. Connection cable CAT5-STP, maximum cable length of 100 m to hub |
| Finish | Panel: Aluminum, black, alumite, case: Surface-treated steel plate |
| Dimensions (W x H x D) | 482 x 88.4 x 349 mm (19", 2U) |
| Weight | 6.2kg |

SX-2000 series Audio Output Unit



SX-2100AO

- > Multiple units can be decentralized 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 switch over 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 or VX-3000DS
 - > 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
 - > Automatic control of stand-by amplifier

Options

- > SX-2000CI: Control Input Unit
- > SX-2000CO: Control Output Unit
- > VP-3154: 150 W by 4 channels amplifier
- > VP-3304: 300 W by 4 channels amplifier
- > VP-3504: 500 W by 4 channels amplifier
- > 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

Specifications

| | SX-2100AO |
|------------------------------|---|
| Applicable Model | VX-2000DS, VX-3000DS |
| Power Source | 24 V DC (2 power inputs) |
| Current Consumption | Under 1.2 A |
| Audio Output | 8 outputs, 0 dBV, load: 600 Ω 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 dBV, 10 kΩ, 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, VX-3000DS: 2 interfaces, connection cable CAT5-STP, RJ45 connector, VX-3000DS |
| 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 |
| Finish | Panel: Aluminum, black, alumite, Case: Surface-treated steel plate |
| Dimensions (W x H x D) | 482 x 88.4 x 349 mm (19", 2U) |
| Weight | 7.1 kg |

SX-2000 series Control Input Unit



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SX-2000CI

- > 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
- > Decentralised installation of multiple units possible
- > RJ45 connectors

Options

- > SX-2100AO: Audio Output Unit
- > SX-2000AO: Audio Output Unit

Specifications

| | SX-2000CI |
|-------------------------|--|
| Applicable Model | VX-2000DS, VX-3000DS |
| Power Source | 24 V DC, 2 independent Inputs |
| Current Consumption | Under 0.55 A (when operated on 24 V DC) |
| Control Outputs | 32 inputs |
| Input/Output Connector | Input: 1, output: 1 RJ45 connector |
| Connection cable | Shielded category 5 twisted pair cable (CAT5-STP) |
| Maximum Cable Distance | 800 m |
| Output Voltage | 24 V DC \pm 10% or less |
| Maximum Feeding Current | 100 mA |
| Connector | Removable terminal block (2 pins) |
| Finish | Panel: Aluminum, black, alumite, Case: Surface-treated steel plate |
| Dimensions (W x H x D) | 482 x 44 x 331.5 mm (19", 1U) |
| Weight | 3.6 kg |

SX-2000 series Control Output Unit



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SX-2000CO

- > 32 control outputs
- > Front panel LED for monitoring the line status
- > Supply of stabilized 24 V DC
- > 2 independent power inputs
- > Decentralised installation of multiple units possible
- > RJ45 connectors

Options

- > SX-2100AO: Audio Output Unit
- > SX-2000AO: Audio Output Unit

Specifications

| | SX-2000CO |
|------------------------|--|
| Applicable Model | VX-2000DS, VX-3000DS |
| Power Source | 24 V DC, 2 independent Inputs |
| Current Consumption | Under 0.29 A (when operated on 24 V DC) |
| Control Outputs | 32 outputs, max. 40 V DC, 2 – 300 mA |
| Input/Output Connector | Input: 1, output: 1 RJ45 connector |
| Connection cable | Shielded category 5 twisted pair cable (CAT5-STP) |
| Maximum Cable Distance | 800 m |
| Finish | Panel: Aluminum, black, alumite, Case: Surface-treated steel plate |
| Dimensions (W x H x D) | 482 x 44 x 331.5 mm (19", 1U) |
| Weight | 3.6 kg |

SX-2000 series Emergency and Remote Microphone



RM-200SA / RM-210

- > 13 function switches
- > Zone, group, all-call paging, and activate 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 connected
- > Covered switch prevents against accidental use
- > RM-210: Allows extended zone selection

RM-200SF

- > Further product information and specifications please see page 7

Options

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

| Specifications | RM-200SA | RM-210 |
|--------------------------------|---|--|
| Applicable Model | SX-200RM in SX-2100AI, RM-210 | RM-200M, RM-200X, RM-200XF, RM-200SA, RM-200SF |
| Power Requirement | 24 VDC (operating range: 15 – 40 VDC) | From remote microphone |
| Current Consumption | 240mA maximum | 80 mA max. (in terms of DC power inputs of RM-200SA) |
| Distortion | Under 1 % | - |
| Frequency Response | 100Hz – 20 kHz | - |
| Signal-to-Noise Ratio | Over 60 dB | - |
| Audio Output | 0 dBV, 600 Ω, 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 up to 32 messages | - |
| Key Extension | Max. 4 RM-210 | 10 keys, freely assignable |
| Connection Cable and Connector | Category 5 STP cable, RJ45 connector | Connection by way of dedicated cable |
| Finish | ABS resin, bluish gray (PANTONE 538 or its equivalent) | |
| Dimensions (W x H x D) | 190 x 76.5 x 215mm (Gooseneck microphone excluded) | 110 x 76.5 x 215 mm |
| Weight | 880g | 350g |

SX-2000 series IP Remote Microphone Station



N-8610RM

- > Connection via LAN or switching hub and SX-200IP
- > Can make a paging call to any selected zone(s) of SX-2000 System
- > Two way communication capability with other stations in N-8000 Intercom System
- > 14 function keys
- > Up to 4 RM-210 Extension units can be connected
- > Powered by PoE-compatible switching hub or optional AC adapter

Options

- > RM-210: Key extension unit
- > WB-RM200: Wall mounting bracket
- > AD-1210P: AC Adapter
- > SX-200IP: IP Interface Module

| Specifications | N-8610RM |
|------------------------|--|
| Applicable Model | SX-200IP in SX-2100AI |
| Power Source | Power supply device that complies with IEEE802.3af standard or 12VDC (supplied from the AC adapter (option)) |
| Power Consumption | 4W (Use of the AC adapter, 12V DC), 8.5W (when connecting 4 RM-210 Extension units) 5.2W (Use of the PoE, 48V DC), 7.5W (when connecting 4 RM-210 Extension units) |
| Key Extension | Max. 4 RM-210 (maximum 2 units at PoE power supply) |
| Network Section | Network I/F: 10BASE-T/100BASE-TX (Automatic-Negotiation) Network Protocol: TCP/IP, UDP, ARP, ICMP, HTTP, RTP, IGMP Audio Packet Transmission System: Unicast, Multicast Voice Packet Loss Recovery: Silence insertion Audio Delay Time: 80 ms, 320 ms (controllable on the software) |
| Finish | ABS resin, bluish gray (PANTONE 538 or its equivalent) |
| Dimensions (W x H x D) | 190 x 76.5 x 215 mm (excluding microphone) |
| Weight | 700 g |

SX-2000 series Terminal Unit



RM-200RJ

- > Convert the RJ45 connector into a screw terminal block
- > Used to connect between a trunk cable (such as CPEV cable) and a feeder cable (such as CAT-5 or CAT-6 cable) in wiring a remote microphone
- > Built-in indicator shows the voltage status of DC power cable when the remote microphone cable for the SX-2000 series system is connected

Specifications

| Specifications | RM-200RJ |
|------------------------|---|
| Applicable Model | SX-2100AI, RM-200SA, RM-200SF |
| Applied Voltage | Under 40 V |
| Withstand Voltage | 1A |
| Voltage Indicator | Monitor terminals: terminal No 7 (+) and terminal No 8 (-), extinguish voltage: 14 V or less, lighting voltage: 21 V or more, indicator ON/OFF switchable |
| Connector | RJ45 connector: 1 |
| Terminal | M3 screw terminal (10 pins), distance between barriers: 6.62 mm |
| Finish | Surface-treated steel plate, black, paint |
| Dimensions (W x H x D) | 84 x 116 x 25.7 mm |
| Weight | 250 g |

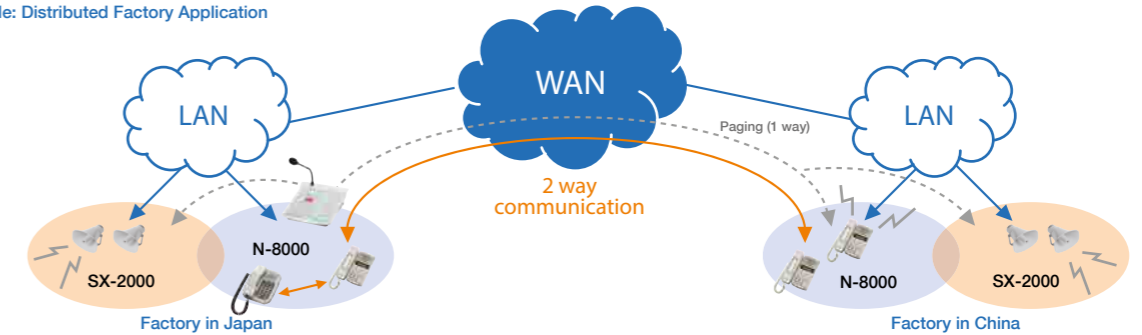
SX-2000 series System Configuration

Integration of SX-2000 with N-8000 IP Intercom strengthens system capabilities.

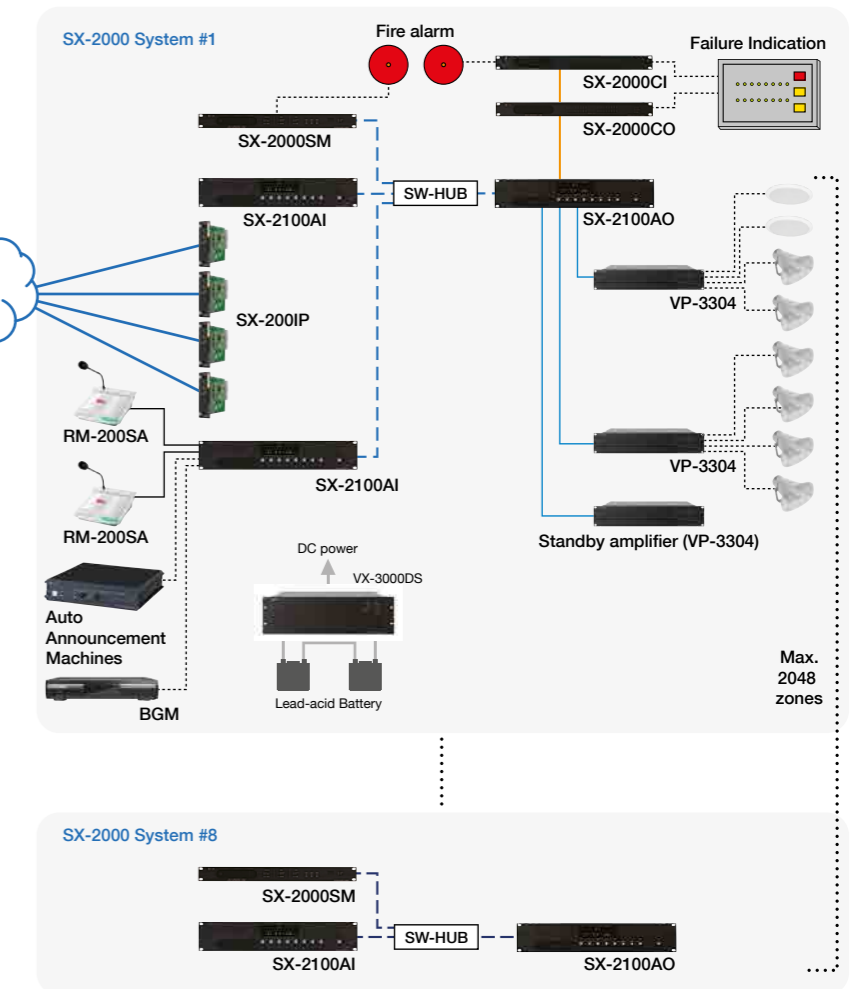
A large system with up to 2048 zones is realized on the IP Network.
From a remote location, IP Station* can make a paging call to any selected zone(s).

*N-8610RM and N-8600MS

Example: Distributed Factory Application

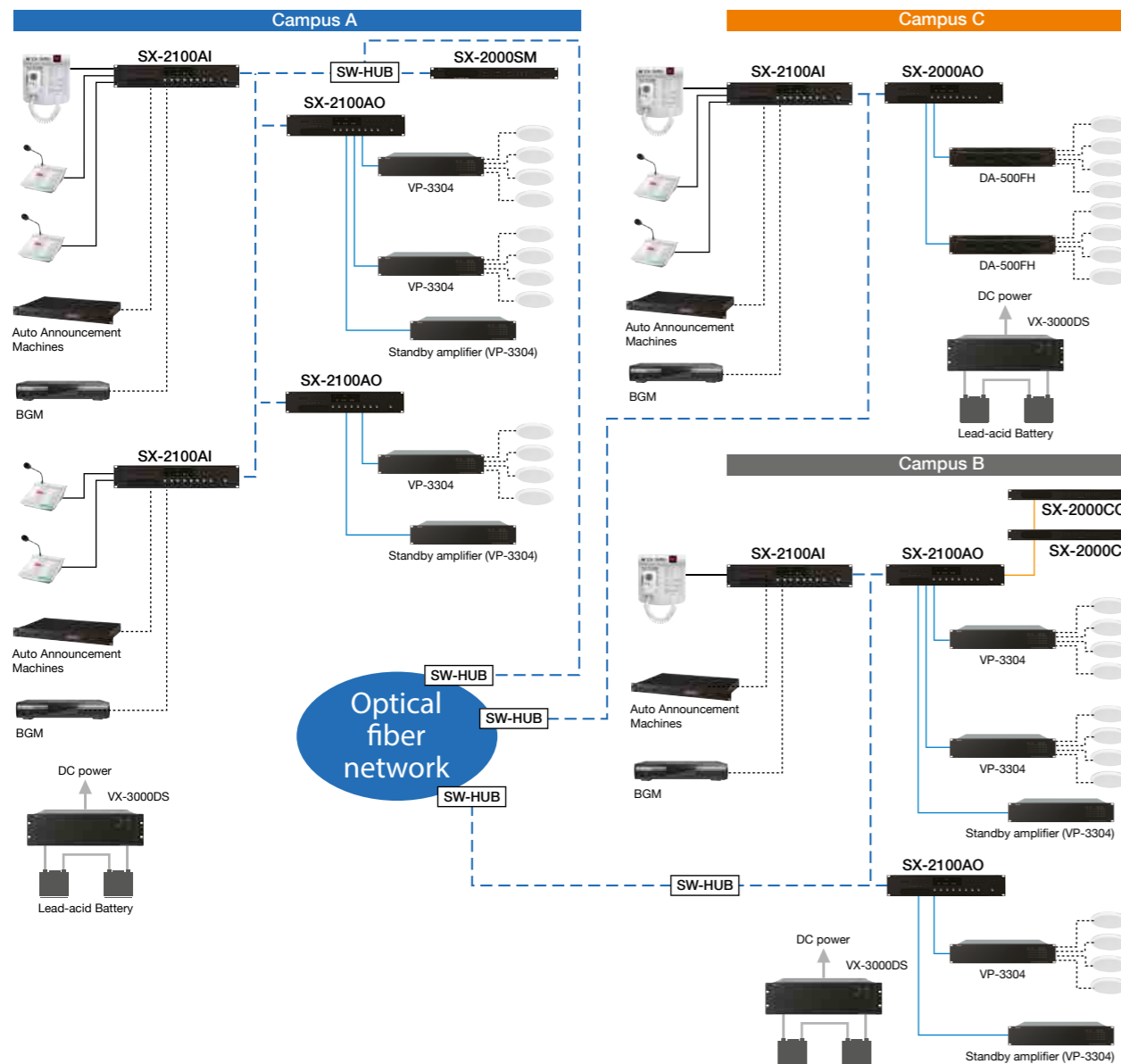
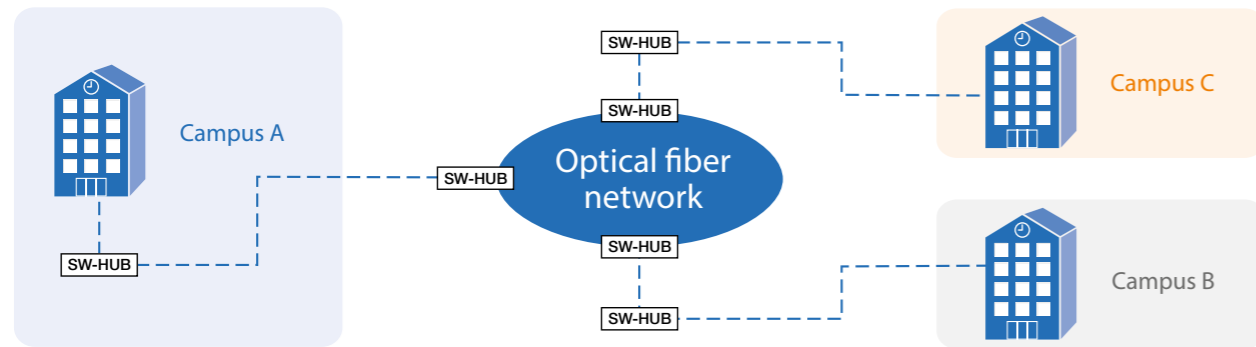


N-8000 IP Intercom System



SX-2000 series System Configuration

Distributed Control System Example (University)



CR series Racks & Accessories

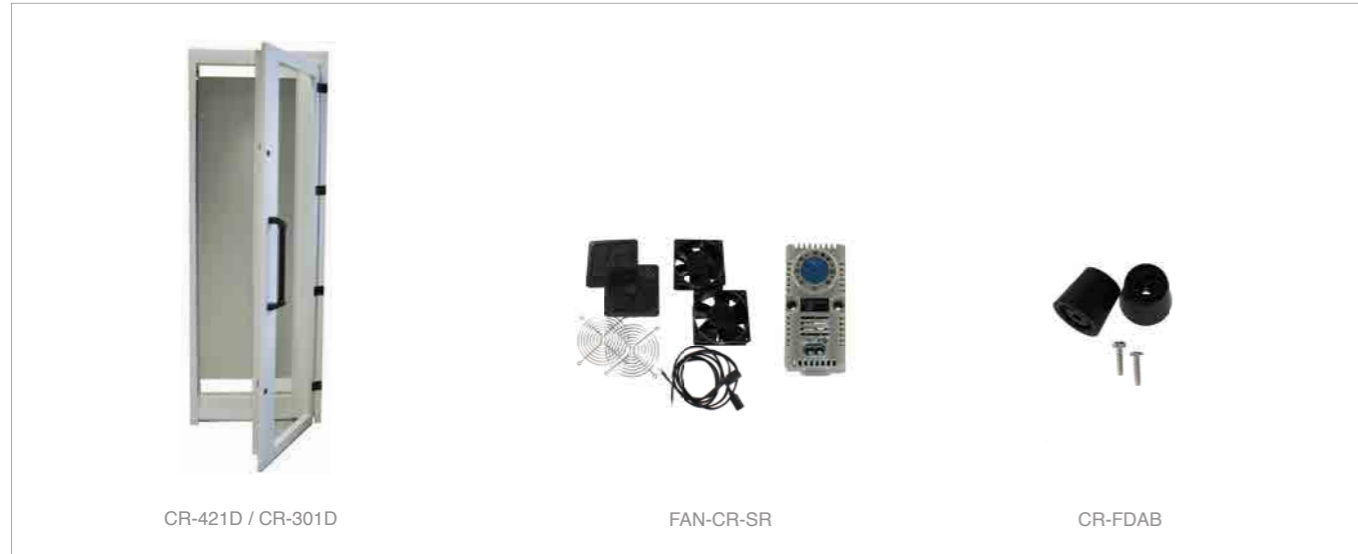


CR Series

- Available in 6 Versions
- Delivery in individual parts
- 1,5 mm steel plate
- Cable inserts at top and bottom
- Colour: light grey, RAL 9035, structured paint



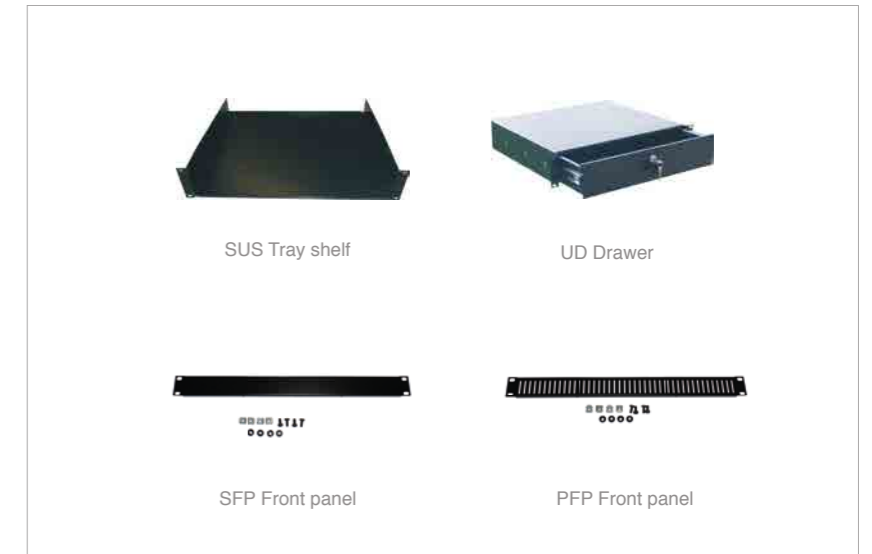
| Art.-Nr. | Description | Dimensions (W x H x D in mm) | Weight in kg |
|----------|---|------------------------------|--------------|
| CR-15 | Rack 15 units, incl. side panels | 650 x 781 x 600 | 28.00 |
| CR-22 | Rack 22 units, incl. side panels | 650 x 1092 x 600 | 35.00 |
| CR-27 | Rack 27 units, incl. side panels | 650 x 1314 x 600 | 40.00 |
| CR-35 | Rack 35 units, incl. side panels | 650 x 1670 x 600 | 51.00 |
| CR-40 | Rack 40 units, incl. side panels | 650 x 1892 x 600 | 62.00 |
| CR-44 | Rack 44 units, incl. side panels | 650 x 2070 x 600 | 66.00 |
| RC-15 | Rear door for CR-Series 15 units | 485 x 666 x 20 | 3.90 |
| RC-22 | Rear door for CR-Series 22 units | 485 x 977 x 20 | 5.60 |
| RC-27 | Rear door for CR-Series 27 units | 485 x 1199 x 20 | 6.80 |
| RC-35 | Rear door for CR-Series 35 units | 485 x 1555 x 20 | 8.60 |
| RC-40 | Rear door for CR-Series 40 units | 485 x 1777 x 20 | 10.00 |
| RC-44 | Rear door for CR-Series 44 units | 485 x 1955 x 20 | 11.00 |
| PGD-15 | Plexiglass door for CR-Series 15 units | 566 x 781 x 25 | 6.20 |
| PGD-22 | Plexiglass door for CR-Series 22 units | 566 x 1092 x 25 | 8.00 |
| PGD-27 | Plexiglass door for CR-Series 27 units | 566 x 1314 x 25 | 9.00 |
| PGD-35 | Plexiglass door for CR-Series 35 units | 566 x 1670 x 25 | 11.10 |
| PGD-40 | Plexiglass door for CR-Series 40 units | 566 x 1892 x 25 | 12.30 |
| PGD-44 | Plexiglass door for CR-Series 44 units | 566 x 2070 x 25 | 13.30 |
| FDV-15 | Perforated grid door for CR-Series 15 units | 566 x 781 x 25 | 3.90 |
| FDV-22 | Perforated grid door for CR-Series 22 units | 566 x 1092 x 25 | 5.60 |
| FDV-27 | Perforated grid door for CR-Series 27 units | 566 x 1314 x 25 | 6.80 |
| FDV-35 | Perforated grid door for CR-Series 35 units | 566 x 1670 x 25 | 8.60 |
| FDV-40 | Perforated grid door for CR-Series 40 units | 566 x 1892 x 25 | 10.00 |
| FDV-44 | Perforated grid door for CR-Series 44 units | 566 x 2070 x 25 | 11.00 |
| SB-4 | Caster base for CR-Series | 650 x 100 x 600 | 4.50 |
| CB-4 | Rolling caster base, closed for CR-Series | 650 x 162 x 600 | 6.00 |
| BC-3 | 3-fold bottom plate for CR-Series | 480 x 430 | |
| LF-4 | Leveller feet, adjustable | | |
| BCK-1 | Brush strip for CR-Series | | |
| FAN-KIT | Top cover with 2 fans | | |
| SA-1 | Sliding rail for heavy units | | |
| FDL-1 | Lock for racks | | |
| CR-SS | Accessory Set: captive nut, washers (100 pcs) | | |



CR-D Series

- > Available in 4 versions
- > Delivery completely mounted
- > 2 mm steel plate
- > Cable inserts at top and bottom
- > Holes for wall- and floor fixation
- > Suitable cage nut: Typ W (1.8 - 2.6 mm)
- > Colour: light grey, RAL 9035, structured paint

| Art.-Nr. | Description | Dimensions (W x H x D in mm) | Weight in kg |
|-----------|---|------------------------------|--------------|
| CR-301D | Rack 30 units with rotatable frame | 750 x 1545 x 500 | 72.00 |
| CR-301FD | Rack 30 units with rotatable frame, with door | 750 x 1545 x 500 | 72.00 |
| CR-421D | Rack 42 units with rotatable frame | 750 x 2080 x 500 | 104.00 |
| CR-421FD | Rack 42 units with rotatable frame, with door | 750 x 2080 x 612 | 130.00 |
| FAN-CR-SR | Fan Set | | |
| CR-FDAB | Stop for CR-421FD | | |
| YA-707D | Sliding rail, 1 pair | | |



CR-WG Series

- > Available in 4 versions
- > 3-part housing
- > 1.5 mm steel plate
- > Delivery completely mounted
- > Cable inserts at top and bottom
- > Colour: light grey, RAL 9035, structured paint

| Art.-Nr. | Description | Dimensions (W x H x D in mm) | Weight in kg |
|------------|---|------------------------------|--------------|
| CR-WG3-12 | Wall housing with door, swivelling mid-section and back section, 12 units | 600 x 611 x 600 | 30.00 |
| CR-WG3-15 | Wall housing with door, swivelling mid-section and back section, 15 units | 600 x 744 x 600 | 35.00 |
| CR-WG3-18 | Wall housing with door, swivelling mid-section and back section, 18 units | 600 x 878 x 600 | 40.00 |
| CR-WG3-21 | Wall housing with door, swivelling mid-section and back section, 21 units | 600 x 1011 x 600 | 45.00 |
| CR-SS | Accessory Set: captive nut, washers (100 pcs each) | | |
| CR-WG3-FAN | Fan expansion set | | |
| CR-WG3-RS | Mounting rail | | |
| CR-WG3-GS | Sliding rail, in conjunction with CR-WG3-RS | | |
| CR-WG3-WM | Wall-mounting rail | | |

Accessories

- > For all Rack Series

| Art.-Nr. | Description | Dimensions (W x H x D in mm) | Weight in kg |
|----------|---|------------------------------|--------------|
| SUS-2 | Tray shelf, 2 units, 19 Inch | 483 x 88 x 375 | 3.10 |
| SUS-3 | Tray shelf, 3 units, 19 Inch | 483 x 88 x 375 | 3.40 |
| PUS-2 | Tray shelf, 2 units, perforated, 19 Inch | 483 x 133 x 375 | 2.80 |
| PUS-3 | Tray shelf, 3 units, perforated, 19 Inch | 483 x 133 x 375 | 3.00 |
| UD-2 | Drawer 2 units, closed, 19 Inch | 483 x 88 x 382 | 8.00 |
| UD-3 | Drawer 3 units, closed, 19 Inch | 483 x 133 x 382 | 9.20 |
| SFP-1 | Front panel 1 units, 19 Inch | 483 x 44 x 1.5 | 0.30 |
| SFP-2 | Front panel 2 units, 19 Inch | 483 x 88 x 1.5 | 0.56 |
| SFP-3 | Front panel 3 units, 19 Inch | 483 x 133 x 1.5 | 0.80 |
| PFP-1 | Front panel, perforated, 1 units, 19 Inch | 483 x 44 x 1.5 | 0.26 |
| PFP-2 | Front panel, perforated, 2 units, 19 Inch | 483 x 88 x 1.5 | 0.52 |
| PFP-3 | Front panel, perforated, 3 units, 19 Inch | 483 x 133 x 1.5 | 0.75 |

Overview Remote Microphones

| System | Sprechstelle | Tastaturerweiterung | Max. Anzahl Tastaturerweiterungen je Sprechstelle | Allgemeine Durchsagen | Notfall-durchsagen |
|---------------|--------------|---------------------|---|-----------------------|--------------------|
| VX-3000 Serie | RM-300X | RM-210F | 7 | • | • |
| | RM-200SF | RM-320SF | 4 | • | - |
| VM-3000 Serie | RM-200M | RM-210 | 4 | • | - |
| | RM-300MF | RM-320F | 3 | - | • |
| VX-2000 Serie | RM-200X | RM-210 | 9 | • | • |
| | RM-200XF | RM-210 RM-320F | 10 5 | • • | • • |
| SX-2000 Serie | RM-200SA | RM-210 | 4 | • | • |
| | RM-200SF | RM-210 RM-320F | 5 2 | • • | - - |
| | N-8610RM | RM-210 | 4 | • | - |

Speaker Lineup - Legend



This icon indicates that the speaker EN 54-24 certified and is therefore legalised for use in conjunction with fire detection systems.



This icon indicates that the speaker is fully compliant to the BS5839 part 8 code of practice.



This icon indicates that the speaker complies by the Ingress Protection standard (IP). Seven IP ratings are present within our speaker lineup: IP32, IP34, IP64, IP65, IP66, IPX4 & IPX2. These icons will help show how the speaker can perform within different types of weather conditions.



This icon indicates that ease data is available for this speaker.

Array Speaker



HX-5B-WP EB-Q / HX-5W-WP EB-Q

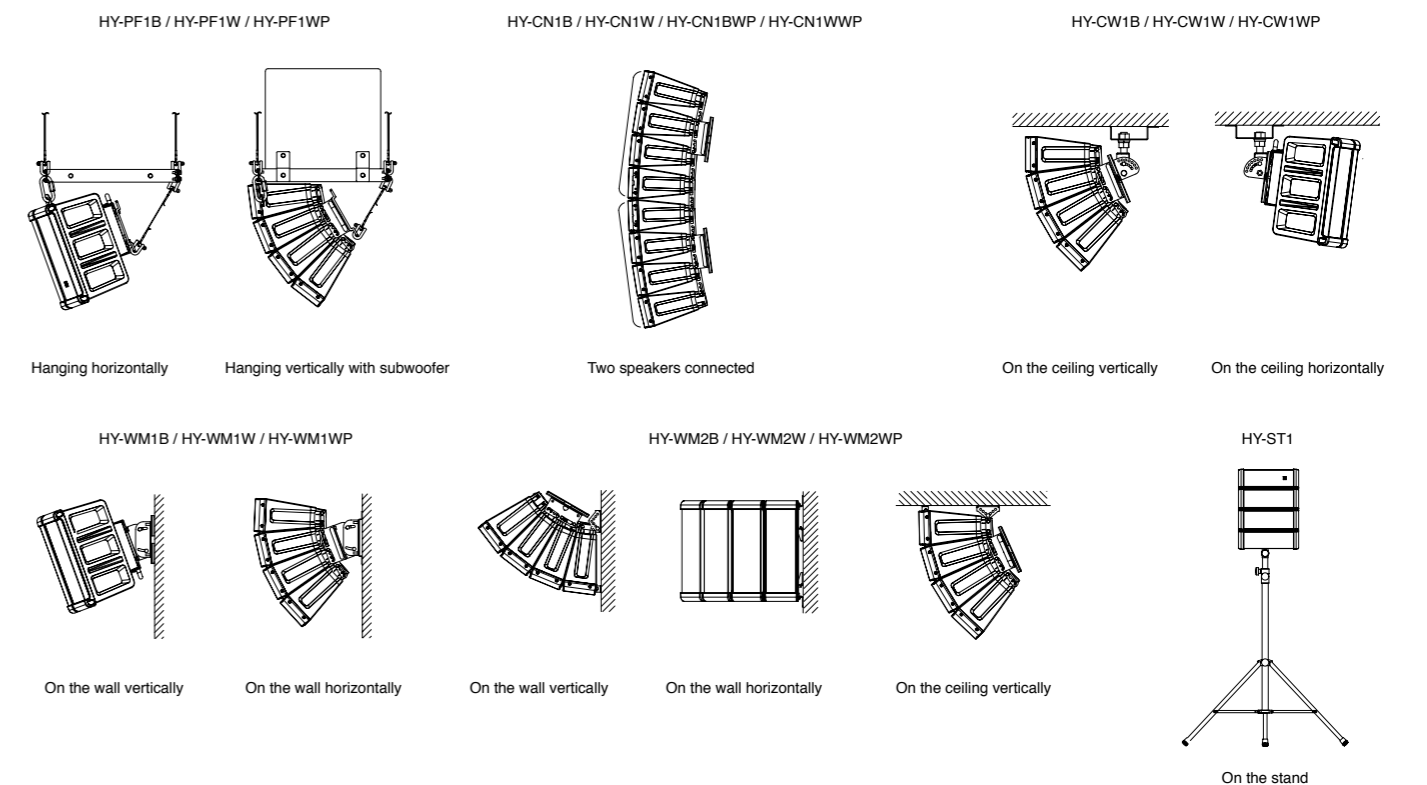
- Variable dispersion speaker system
- Four speaker modules ensure high power and high quality
- Weather & kick proof
- The changeable orientation of each of the four speaker modules independently allows the directivity angle of the speaker system to be adjusted

Options

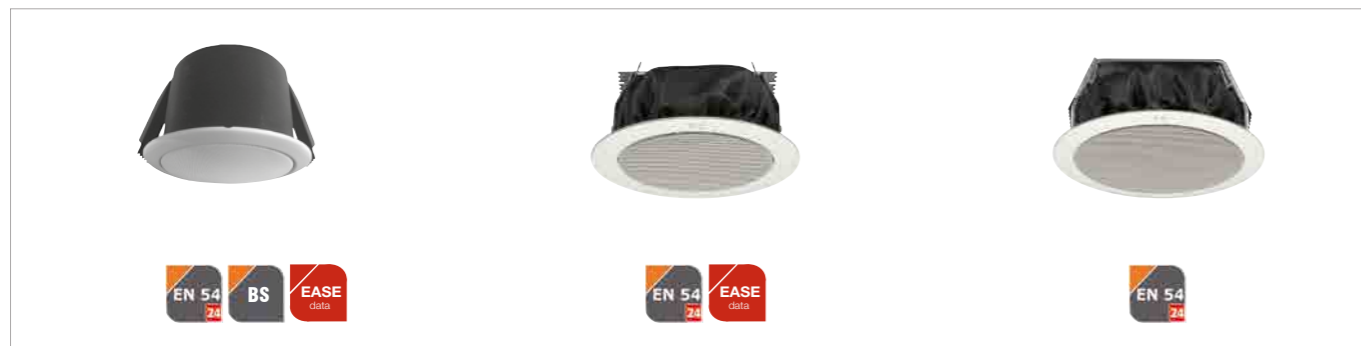
- Matching Transformer: MT-200 (Tappings: 60 / 120 / 200 W)
- Please find mounting options on the bottom of this page

| Specifications | HX-5B-WP EB-Q | HX-5W-WP EB-Q |
|-------------------------|---|---------------|
| Power Handling Capacity | Continuous pink noise: 200 W, Program: 600 W | |
| Rated Impedance | 8 Ω | |
| Sensitivity (1W, 1m) | 96 dB (60° mode), 97 dB (45° mode), 98 dB (30° mode), 99 dB (15° mode)* | |
| Frequency Response | 95 Hz – 20 kHz (-10dB) (60° mode), 100 Hz – 20 kHz (-10dB) (45° mode), 105 Hz – 20 kHz (-10dB) (30° mode), 110 Hz – 20 kHz (-10dB) (15° mode) | |
| Speaker Component | Low: 5" cone-type x 4, High: balanced dome-type x 12 | |
| Connection | Integrated cable | |
| Colour | black | white |
| Dimensions (W x H x D) | 408 x 546 x 342 mm | |
| Weight | 16 kg | |

Mounting Options



Ceiling Speaker



PC-1867FC

- > 9 W (continuous program)
- > Fire dome made of steel
- > Easy installation
- > 12 cm speaker
- > For mounting in 156 mm holes

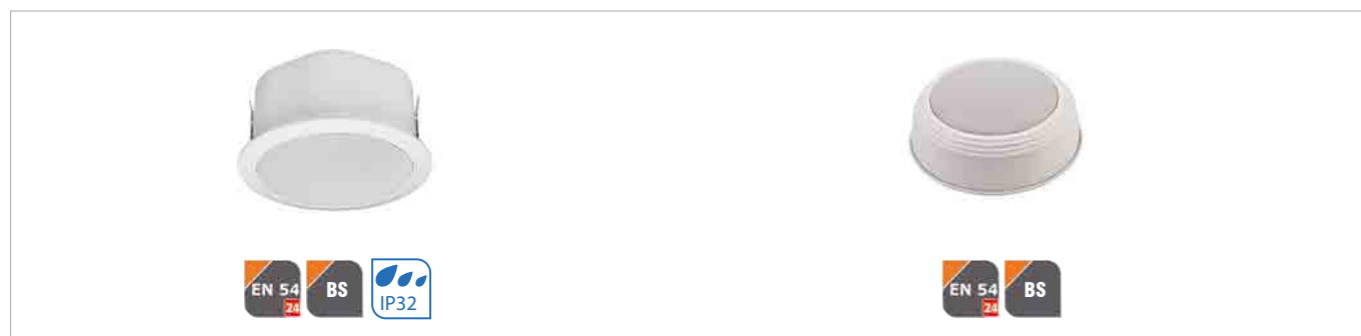
PC-1869EN

- > Flat front panel
- > Quick and easy installation
- > 12 cm speaker
- > For mounting in 75 mm depth

PC-2369EN

- > 9 W (continuous program)
- > Easy installation
- > 16 cm speaker
- > For mounting in 110 mm depth

| Specifications | PC-1867FC | PC-1869EN | PC-2369EN |
|------------------------|---|---|------------------|
| Rated Input | | 6W (100 V), 3W (70 V) | |
| Tappings | | 6 / 3 / 1.5 / 0.8 W (100 V); 3 / 1.5 / 0.8 / 0.4 W (70 V) | |
| Sensitivity (1W, 1m) | 90 dB | 94 dB | |
| Frequency Response | 160 Hz – 13 kHz | 100 Hz – 18 kHz | 70 Hz – 18 kHz |
| Mounting Hole Diameter | 156 (Dia.) ±3 mm | 150 (Dia.) ±3 mm | 200 (Dia.) ±3 mm |
| Speaker Component | 5" cone-type | 5" cone-type | 6" cone-type |
| Connection | Ceramic screw terminals, thermal fuse | | |
| Colour | off-white (RAL 9010 or equivalent colour) | | |
| Dimensions (Dia. x D) | 180 x 121 mm | 180 x 77.5 mm | 230 x 113.8 mm |
| Weight | 1,400 g | 820 g | 1,100 g |



PC-245AB-EB

- > A/B wiring
- > Firedome prevents passing the flames into the ceiling
- > 2 separate 100 V transformer and 2 speaker
- > Easy installation

PC-275AB-EB

- > A/B wiring
- > Only 86 mm depth
- > 2 separate 100 V transformer and 2 speaker
- > Quick-mount

| Specifications | PC-245AB-EB | PC-275AB-EB |
|------------------------|---|---|
| Rated Input | 2 x 6W (100 V) | |
| Tappings | 6 / 3 / 1.5 W (100 V) | |
| Sensitivity (1W, 1m) | 79 dB | 92 dB |
| Frequency Response | 150 Hz – 20 kHz (-10 dB from sensitivity) | 180 Hz – 20 kHz (-10 dB from sensitivity) |
| Mounting Hole Diameter | 220 (Dia.) x 116 (D) mm | Depending on back box |
| Speaker Component | 3x5" full range dual cone (A/B 2-lines) | 6" full range, dual cone (A/B 2-lines) |
| Connection | 2 ceramic screw terminals, thermal fuse | |
| Colour | off-white (RAL 9010 or equivalent colour) | |
| Dimensions (Dia. x D) | 245 x 131 mm | 274.4 x 86.5 mm |
| Weight | 2,050 g | 1,490 g |

Box Speaker



BS-250AB-EB

- > A/B wiring
- > For indoor applications
- > 2 separate 100 V transformer and 2 speaker
- > Wide temperature range of -10 °C to +55 °C
- > Fire resistant according to UL 94-V0

BS-678BSB/BSW

- > Stylish, compact and unobtrusive design
- > Quick and easy wall-mount installation
- > Cost effective
- > Horizontal and vertical mounting
- > Easy impedance selection

| Specifications | BS-250AB-EB | BS-678BSB/BSW |
|------------------------|---|--|
| Rated Input | 2 x 6W (100 V Line) | 6W (100 V) |
| Tappings | 2 x 6 / 3 / 1.5 W (100 V); 2 x 3 / 1.5 / 0.8 W (70 V) | 6 / 3 / 1.5 / 0.8 W (100 V); 3 / 1.5 / 0.8 / 0.4 W (70 V) |
| Sensitivity (1W, 1m) | 89 dB | 94 dB |
| Frequency Response | 150 Hz – 20 kHz | 150 Hz – 18 kHz |
| Speaker Component | 4" full range dual cone (A/B 2-lines) | 6" cone-type |
| Connection | Ceramic screw terminals, thermal fuse | |
| Colour | off-white (RAL 9010 or equivalent colour) | BS-678BSB: black (RAL 9011 or equivalent colour) BS-678BSW: white (RAL 9010 or equivalent colour) |
| Dimensions (W x H x D) | 254,5 x 204,5 x 87,5 mm | 250 x 190 x 110 mm |
| Weight | 1,750 g | 1,700 g |



BS-680FC

- > Surface or flush-mounting
- > 6W continuous program
- > High sound quality & sound pressure
- > Bridge wiring possible

BS-1015BSB/BSW

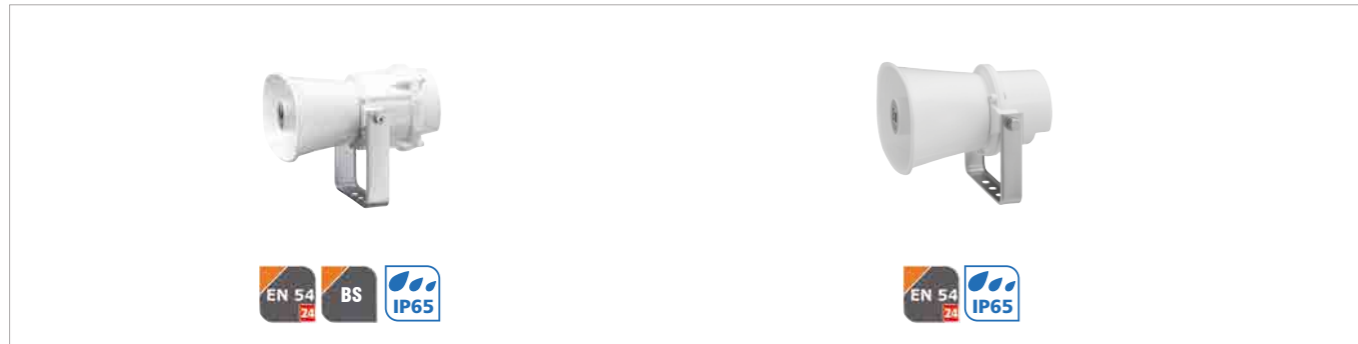
- > 2-way hi-fi speaker
- > 15 W continuous program
- > Splash proof
- > Options: SP-410 (Wall/Ceiling Mounting Bracket), SP-420 (Flush Mounting Frame), ST-16A (Speaker Stand)

BS-1034EN

- > Easy and quick installation
- > Beautiful design due to the Golden Ratio
- > Fire resistant according to UL 94-V0

| Specifications | BS-680FC | BS-1015BSB/BSW | BS-1034EN |
|------------------------|---|--|---|
| Rated Input | 6W (100 V), 3W (70 V) | 15W (100 V), 7.5W (70 V) | 10W (100 V), 10W (70 V) |
| Tappings | 6 / 3 / 1.5 / 0.8 W (100 V); 3 / 1.5 / 0.8 / 0.4 W (70 V) | 15 / 10 / 5 W (100 V); 7.5 / 5 / 2.5 W (70 V) | 10 / 5 / 3 / 1 W (100 V); 10 / 5 / 2.5 / 1.5 / 0.5 W (70 V) |
| Sensitivity (1W, 1m) | 94 dB | 90 dB | 89 dB |
| Frequency Response | 150 Hz – 20 kHz | 80 Hz – 20 kHz | 120 Hz – 20 kHz |
| Speaker Component | 6" double cone-type | Low: 5" cone-type High balanced dome tweeter | Low: 5" cone-type High balanced dome tweeter |
| Connection | Ceramic screw terminals, thermal fuse | | Ceramic screw terminals, thermal fuse, mounting bracket includes screw terminal |
| Colour | off-white (RAL 9010 or equivalent colour) | BS-1015BSB: black (RAL 9011 or equivalent colour) BS-1015BSW: white (RAL 9010 or equivalent colour) | off-white (RAL 9010 or equivalent colour) |
| Dimensions (W x H x D) | 310 x 190 x 90 mm | 196 x 290 x 186 mm | 210 x 330 x 80 mm |
| Weight | 2,600 g | 2,400 g | 1,400 g |

Horn Speaker



SC-615BS

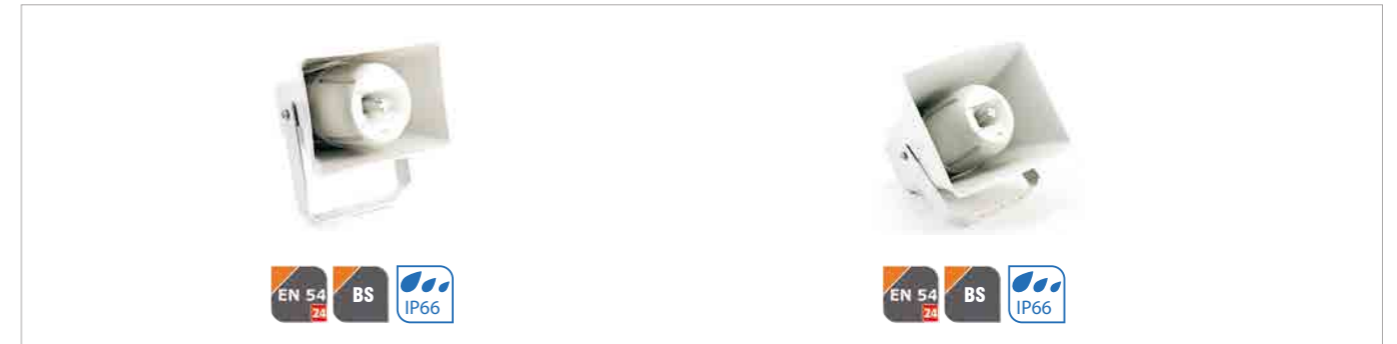
- > All weather durability
- > Unique oval shape
- > Excellent speech clarity
- > High SPL
- > Option: YS-151S Mounting Bracket

SC-630M-EB-Q

- > All weather durability
- > Unique oval shape
- > Excellent speech clarity
- > High SPL

| Specifications | SC-615BS | SC-630M-EB |
|------------------------|--|--|
| Rated Input | 15W (100V) | 30W (100V) |
| Tappings | 15 / 10 / 5 / 3W (100V); 15 / 7.5 / 5 / 2.5 / 1.5W (70V) | 30 / 15 / 10 / 5W (100V); 30 / 15 / 7.5 / 5 / 2.5W (70V) |
| Sensitivity (1W, 1m) | 109dB | 113dB |
| Frequency Response | 315Hz – 12.5kHz | 250Hz – 10kHz |
| Connection | Ceramic screw terminals, thermal fuse | |
| Colour | Horn flare: Aluminium, off-white, powder coating / Reflector horn: ABS resin, off-white / Bracket: Stainless steel | |
| Dimensions (W x H x D) | 172 x 195 x 229 mm | 285 x 227 x 277 mm |
| Weight | 1,500g | 2,000g |

Horn & Pendant Speaker



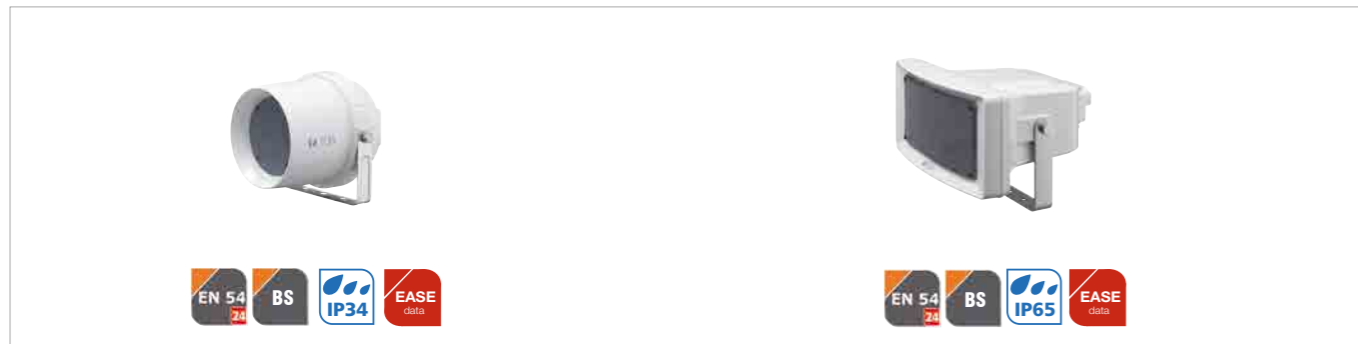
CS-530BS-EB

- > Highly intelligible by 2-way system
- > All weather durability, water and dust protection
- > Impedance change available by tapping changing

CS-660BS-EB

- > Highly intelligible by 2-way system
- > All weather durability, water and dust protection
- > Impedance change available by tapping changing

| Specifications | CS-530BS-EB | CS-660BS-EB |
|------------------------|--|--|
| Rated Input | 30W (100V) | 60W (100V) |
| Tappings | 30 / 15 / 7.5 / 3.75W (100V) | 15 / 10 / 5W (100V), 15 / 7.5 / 5 / 2.5W (70V) |
| Sensitivity (1W, 1m) | 96dB | 97dB |
| Frequency Response | 120Hz – 20kHz | 100Hz – 20kHz |
| Connection | Screw terminal | |
| Colour | Horn and terminal cover: ABS resin, light grey (RAL7035 or equivalent); Brackets and screws: Stainless steel | |
| Dimensions (W x H x D) | 315 x 215 x 355.5 mm | 418 x 332 x 291 mm |
| Weight | 4,700g | 7,100g |



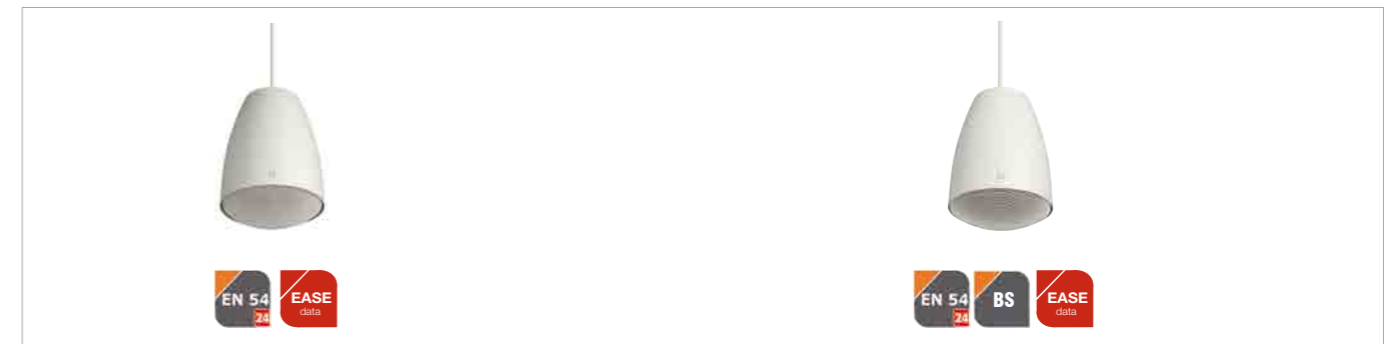
CS-64BS

- > Round projection speaker for outdoor use
- > Lightweight and rugged construction
- > Exponential horn for improved directivity
- > High SPL

CS-154BS

- > Square weatherproof speaker for outdoor use
- > High SPL
- > Impact-proof light weight
- > Complete with stainless steel bracket

| Specifications | CS-64BS | CS-154BS |
|------------------------|---|--|
| Rated Input | 6W (100V) | 15W (100V) |
| Tappings | 6 / 3 / 1W (100V); 6 / 3 / 1.5 / 0.5W (70V) | 15 / 10 / 5W (100V); 15 / 7.5 / 5 / 2.5W (70V) |
| Sensitivity (1W, 1m) | 96dB | 97dB |
| Frequency Response | 130Hz – 13kHz | 150Hz – 15kHz |
| Speaker Component | - | 5" cone-type |
| Connection | Ceramic screw terminals, thermal fuse | |
| Colour | Horn, cover: off-white / Punched net: dark-grey | |
| Dimensions (W x H x D) | 233 x 224 x 249 mm | 366 x 230 x 310 mm |
| Weight | 1,700g | 3,000g |



PE-154EN

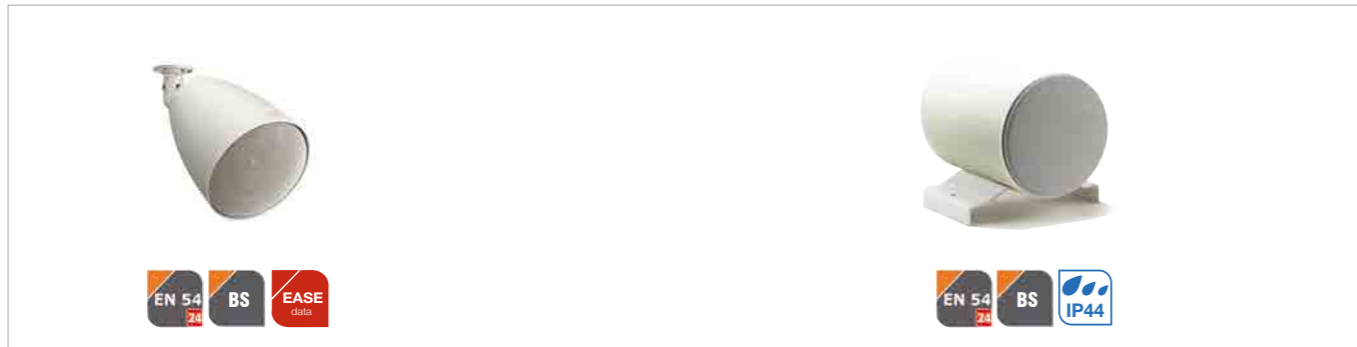
- > Special design to blend with lighting equipment
- > Rugged HIPS resin enclosure
- > Excellent sound quality

PE-154BS

- > Special design to blend with lighting equipment
- > Rugged HIPS resin enclosure
- > Excellent sound quality
- > Fire resistant cable, 3 m

| Specifications | PE-154EN | PE-154BS |
|-----------------------|---|---|
| Rated Input | 15W (100V) | 15W (100V) |
| Tappings | 15 / 10 / 5W (100V); 7.5 / 5 / 2.5W (70V) | 15 / 10 / 5W (100V); 7.5 / 5 / 2.5W (70V) |
| Sensitivity (1W, 1m) | 91dB | 91dB |
| Frequency Response | 70Hz – 20kHz | 70Hz – 20kHz |
| Speaker Component | Low: 5" cone-type, High: 1" balanced dome tweeter | |
| Connection | Ceramic screw terminals, thermal fuse | |
| Colour | off-white (RAL 9010 or equivalent colour) | |
| Dimensions (Dia. x H) | 186 x 251 mm | 186 x 251 mm |
| Weight | 2,100g | 2,330g |

Projection & Design Speaker



PJ-154BS

- > Wide range frequency response
- > Complete with mounting bracket for easy installation

PJ-202DL-EB

- > For indoor and outdoor applications
- > 2 x 5" cone speaker + HC
- > Ceramic screw terminal
- > Rugged bracket included
- > Extreme wide temperature range: -25 °C to +70 °C

| Specifications | PJ-154BS | PJ-202DL |
|----------------------|---|--|
| Rated Input | 15W (100V) | 20W (100V) |
| Tappings | 15 / 10 / 5 W (100V); 7.5 / 5 / 2.5 W (70V) | 20 / 10 / 5 W (100V); 10 / 5 / 2.5 W (70V) |
| Sensitivity (1W, 1m) | 91 dB | 89 dB |
| Frequency Response | 70 Hz – 20 kHz | 120 Hz – 20 kHz |
| Speaker Component | Low: 5" cone-type, High: 1" balanced dome tweeter | 5" P.P. cone + HC x 2 |
| Connection | Ceramic screw terminals, thermal fuse, external connection box, 5-wire BS-compliant | |
| Colour | off-white (RAL 9010 or equivalent colour) | |
| Dimensions | 186 (Dia.) x 251(H) mm | 146 (Dia.) x 186 (D) mm |
| Weight | 2,100g | 3,300g |



F-1000BTWP EB-Q / F-1300BTWP EB-Q / F-2000BTWP EB-Q F-1000WTWP EB-Q / F-1300WTWP EB-Q / F-2000WTWP EB-Q

- > 15W, 30W or 60W
- > 4", 5" or 6"
- > Provides wide dispersion
- > For any environment
- > Built-in speaker protection
- > Easy connection

| Specifications | F-1000 WP-EB | F-1300 WP-EB | F-2000 WP-EB |
|------------------------|---|---|---|
| Rated Input | 15W (100V) | 30W (100V) | 60W (100V) |
| Tappings | 15 / 5 / 3 / 1 W (100V); 7.5 / 2.5 / 1.5 / 0.5 W (70V) | 30 / 10 / 3 / 1 W (100V); 30 / 15 / 5 / 1.5 / 0.5 W (70V) | 60 / 30 / 15 / 5 / 3 W (100V); 15 / 7.5 / 2.5 / 1.5 W (70V) |
| Sensitivity (1W, 1m) | 87 dB | 90 dB | 92 dB |
| Frequency Response | 85 Hz – 20 kHz | 80 Hz – 20 kHz | 65 Hz – 20 kHz |
| Speaker Component | Low: 4" cone-type, High: Balanced dome tweeter | Low: 5" cone-type, High: 2.5 cm dome tweeter | Low: 8" cone-type, High: 2.5 cm dome tweeter |
| Connection | Screw terminals | | |
| Colour | Enclosure: HIPS resin, black or white/Punched net: Surface-treated steel plate, black or white, paint | | |
| Dimensions (W x H x D) | 130 x 202 x 131 mm | 162 x 250 x 161 mm | 244 x 373 x 235 mm |
| Weight | 2,000g | 3,600g | 7,400g |

Further Product Segments

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Our portfolio covers a wide range of products to find the ideal acoustic solution:

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- > Short response times in case of risks and emergency situations
- > Integration into telephone and voice alarm systems
- > Comprehensive management options of e.g. doors, gates, lighting and signals
- > High flexibility and almost unlimited system scalability

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- > Amplifiers
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- > DSP
- > Line Array Speakers
- > Design Speakers

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- > Wireless Microphones for the whole gamut of applications: speech, vocals, theater, stage, aerobic or fixed installations.

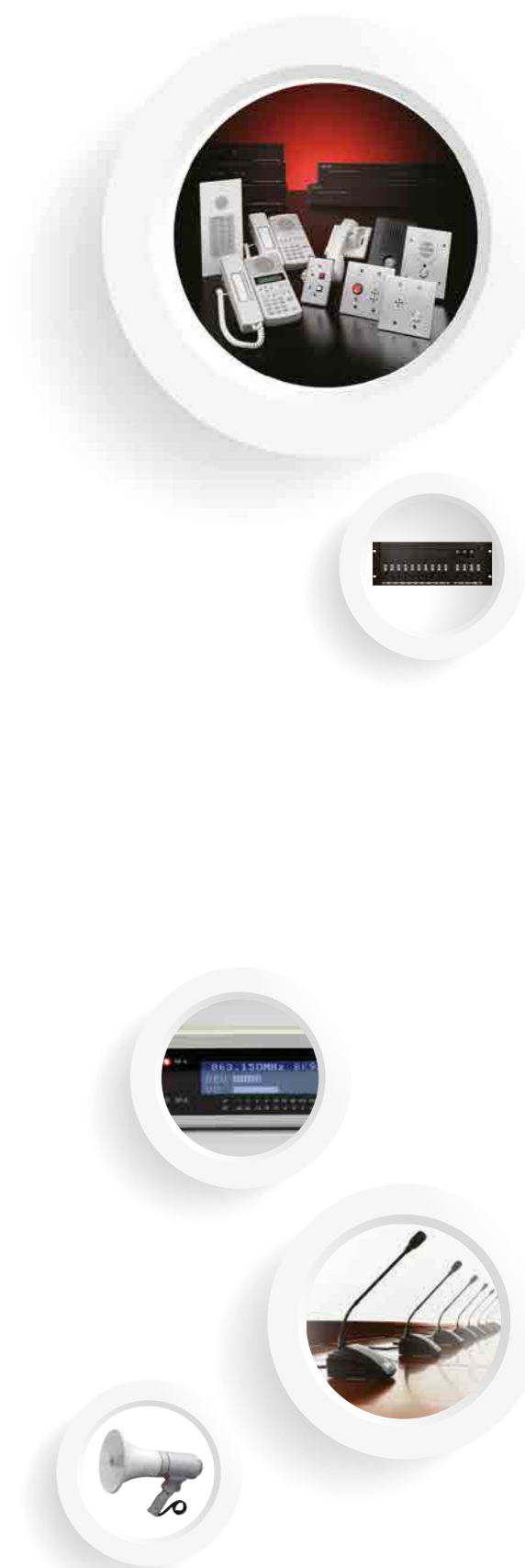
Conference Systems

- > Efficient communication for any type of conference
- > Flexible adaptation of different attendance figures and system configurations

Audio

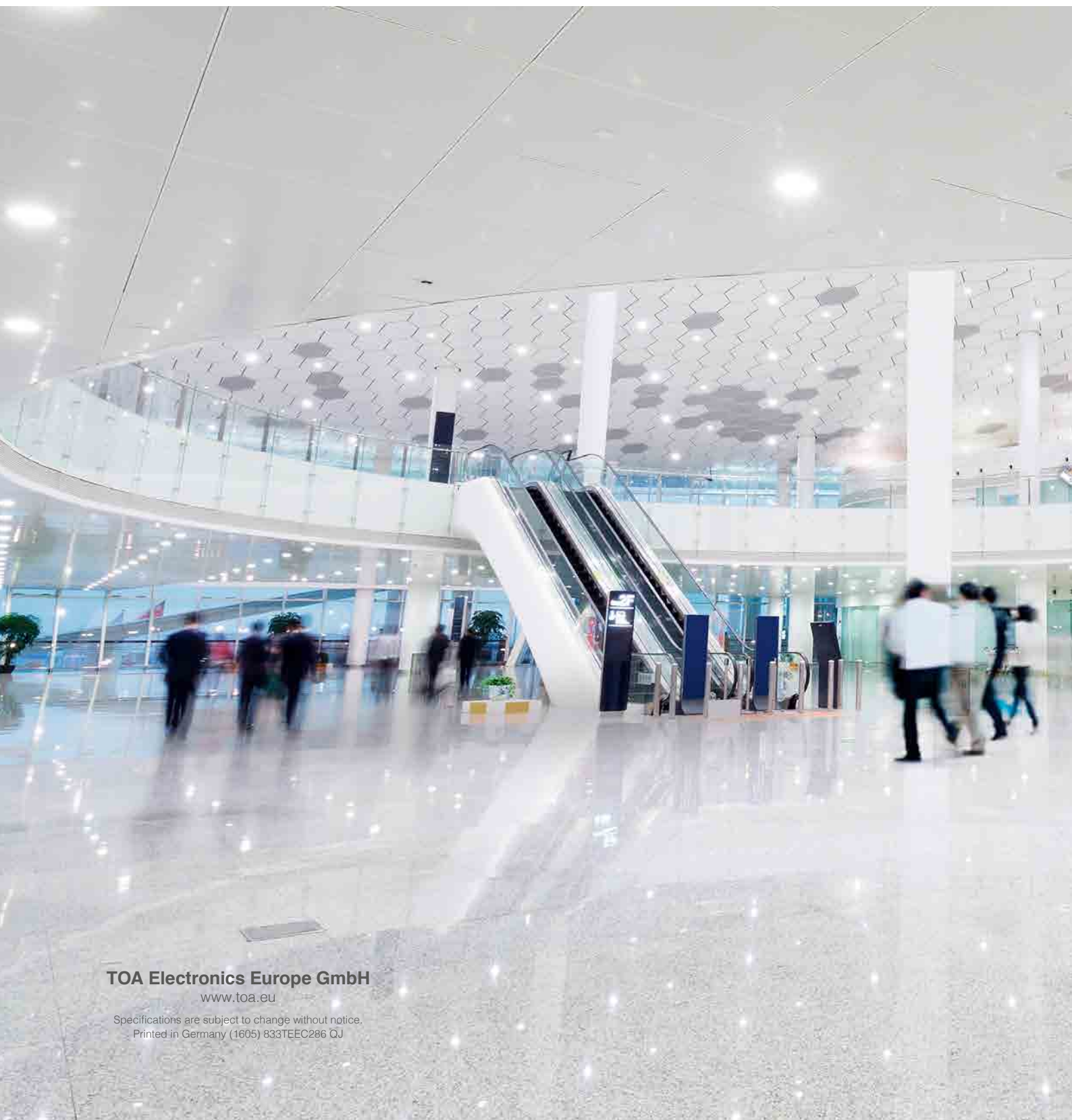
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- > Microphones
- > Megaphones
- > Measuring instruments

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