

## VM-2240 ER

### 240W SYSTEM MANAGING AMP



The VM-2240 is a multifunctional amplifier that can be mounted in an EIA-Standard equipment rack (3-unit size). The unit comes with 4 audio inputs including the background music input, and the speaker output section which has an internal attenuator and 5-zone selector. It permits not only general-purpose broadcast, but also Emergency Broadcast based on the EN60849 Standard which gives pre-recorded voice instructions (optional EV-200M is required) in the emergency situation. Broadcast can be made from an optional RM-200M Remote Microphone as well as from the amplifier, and can be remotely controlled from external equipment. In addition, for 100 V/83 $\Omega$  application the unit features the surveillance function (optional SV-200MA is required) which automatically checks the system for failures.

## Key features

- Programmable system management amplifier
- 120 W or 240 W
- 5 switchable high impedance speaker zones with adjustable attenuators
- 9 units can be combined to increase the output power and number of zones
- 4 input channels come with volume and bass/ treble control on the front panel
- Both BGM inputs with level pre-adjustment
- The routing to the zones of the 3 microphone/ line level inputs and the telephone paging input can be pre-set
- Emergency power input, remote power control, 7 built-in chimes etc.

## Specifications

(\*3) 0 dB= 1 V

|  |   |
|--|---|
| Power Source                               | AC: 230 V, 50/60 Hz<br>DC: 24 V/15 A, M3.5 screw terminal, Barrier distance: 8 mm (0.31"), Applicable cable gauge: AWG22 –AWG14   |
| Power Consumption on AC Mains              | 54 W(With no signal present)  |
| Current Consumption on 24 V DC Power Input | 1 A(With no signal present)   |
| Frequency Response                         | 50 Hz – 16 kHz  |
| Distortion                                 | 1% or less  |
| Signal-to-Noise Ratio                      | 60 dB or more   |
| Tone Control                               | Bass: 100 Hz $\pm$ 10 dB, Treble: 10 kHz $\pm$ 10 dB<br>(Inputs 1 – 3 and BGM individually adjustable.)   |
| Remote Microphone/Expansion Connection     | Amplifier 2 RJ45 female connectors for connecting the RM-200M Remote Microphone and the VM-2120 or VM-2240 unit used as an expansion amplifier.<br>Maximum distance: 800 m (874.89 yd) in total<br>Link cable: Category 5 Shielded<br>Number of connectable RM-200M's: Up to 4<br>Twisted-pair straight cable (TIA/EIA-568A standard)   |
| Input                                      | Inputs 1 - 3: -60 dB(*3) (MIC)/-10 dB(*3) (LINE) (changeable), 600 $\Omega$ , electronically balanced(*4), combined XLR connector (female)/phone jack (Only Input 1 is additionally equipped with DIN connector(*5).)<br>Telephone Paging Input: Push-in terminal block(*6)<br>Voice sound: -10 dB(*3), 10 k $\Omega$ , electronically-balanced input with shield terminal(*4)<br>Control: No-voltage make contact input, open voltage: 3.3 V DC, short-circuit current: under 1 mA<br>BGM 1 -2: -20 dB(*3), 10 k $\Omega$ , RCA pin jack, monaural (internally mixed)<br>Power amplifier input: 0 dB(*3), 10 k $\Omega$ , RCA pin jack<br>External speaker line input: 100 V line, for All-Zone broadcast (This input is selected when the "Unit's broadcast cutoff" control is activated) |
| Output                                     | Speaker output: Plug-in screw connector(*7)<br>5-zone selector with attenuator (all zones simultaneously selectable)<br>Direct speaker line output: Direct output from the power amplifier output transformer (attenuator bypassed), Plug-in screw connector(*7)<br>Line output: 0 dB(*3), 10 k $\Omega$ , RCA pin jack<br>Recording output: 0 dB(*3), 10 k $\Omega$ , RCA pin jack<br>Preamplifier output: 0 dB(*3), 10 k $\Omega$ , RCA pin jack  |
| Control Input                              | For controlling Inputs 1 – 3, Push-in terminal block<br>No-voltage make contact input, open voltage: 3.3 V DC, short-circuit current: under 1 mA or less  |
| Control Input and Output                   | D-sub connector (25-pin, female)<br>Input: No-voltage make contact input, open voltage: 3.3 V DC, short-circuit current: 1 mA or less<br>Output: Open collector output, withstand voltage: 30 V DC, control current: 10 mA or less<br>(1) External control input<br>Activation of messages*6<br>Activation of power<br>Activation and stop of Emergency Broadcast<br>Unit's broadcast cutoff (when activated by an external emergency equipment)<br>(2) Status output<br>Irregularity of communications with the Remote Microphone and an expansion amplifier<br>AC power condition<br>DC power condition<br>Irregularity of the sound source of the Voice Announcement Board<br>Failure (FAULT) indication on<br>Power switch on   |

|                                    |   |
|------------------------------------|---|
| External Attenuator Control Output | Plug-in screw connector*5, relay, no-voltage make contact output, transfer type, withstand voltage: 30 V DC, 125V AC, contact current: 7 A (DC) or less, 7 A (AC) or less   |
| Surveillance Input and Output (*9) | D-sub connector (25-pin, female)<br>Input: No-voltage make contact input, open voltage: 3.3 V DC, short-circuit current: 1 mA or less<br>Output: Open collector output, withstand voltage: 30 V DC, operating current: 10 mA or less                            |
| Power Supply                       | 24 V DC/0.1 A, for supplying power to an optional Amplifier Control Unit RU-2001/-2002, push-in terminal block*   |
| Chime Tones                        | Built-in chime: 2-tone chime/2-tone chime (fast repeat)/4-tone chime (Up)/Single-tone chime/ 4-tone chime (Up & Down)/off<br>Voice Announcement Board sound source: Pre-recorded chime*6  |
| Function                           | Two units stacking (VM-2120 or VM-2240) Emergency broadcast (sequential control) Broadcast priority control<br>Surveillance (failure detection) function Power supply to only one Remote Microphone (RM-200M)<br>Line resistance: 40 $\Omega$ (one way) or less |
| Operating Temperature              | 0 °C to +40 °C (32 °F to 104 °F)  |
| Finish                             | Panel: ABS resin, dark gray (PANTONE 447C or its equivalent), paint<br>Case: Steel plate, dark gray (PANTONE 446C or its equivalent), paint   |
| Dimensions                         | 419 (W) x 143.3 (H) x 355.7 (D) mm (16.5" x 5/64" x 14")  |
| Weight                             | 14.5 kg (31.97 lb)  |
| Optional Accessories               | Rack mounting bracket: MB-36<br>Input transformer: IT-450<br>Voice announcement board: EV-200M<br>Surveillance board: SV-200MA  |

(\*4) Can be transformer-balanced with the addition of an optional IT-450 input transformer.

(\*5) For connection of the Paging Microphone PM-660D with a remote control switch

(\*6) Usable cable diameter: AWG26 - AWG20, 0.5 m<sup>2</sup>

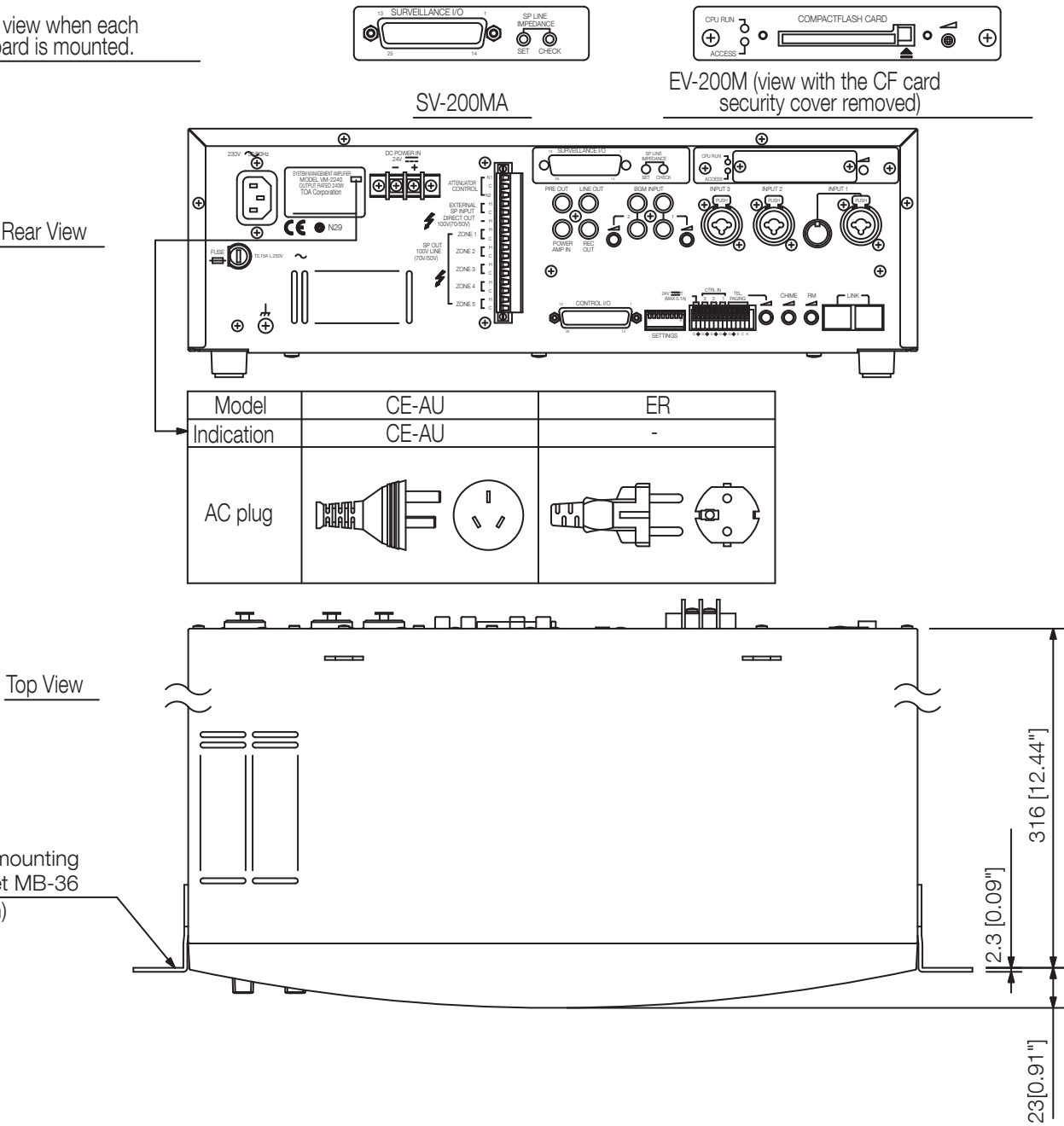
(\*7) Usable cable diameter: AWG24 - AWG12, 2.5 m<sup>2</sup>

(\*8) An optional EV-200M Voice Announcement Board is required. The chime sound source must be pre-recorded into a CF (CompactFlash) card to be inserted into the EV-200M Board.

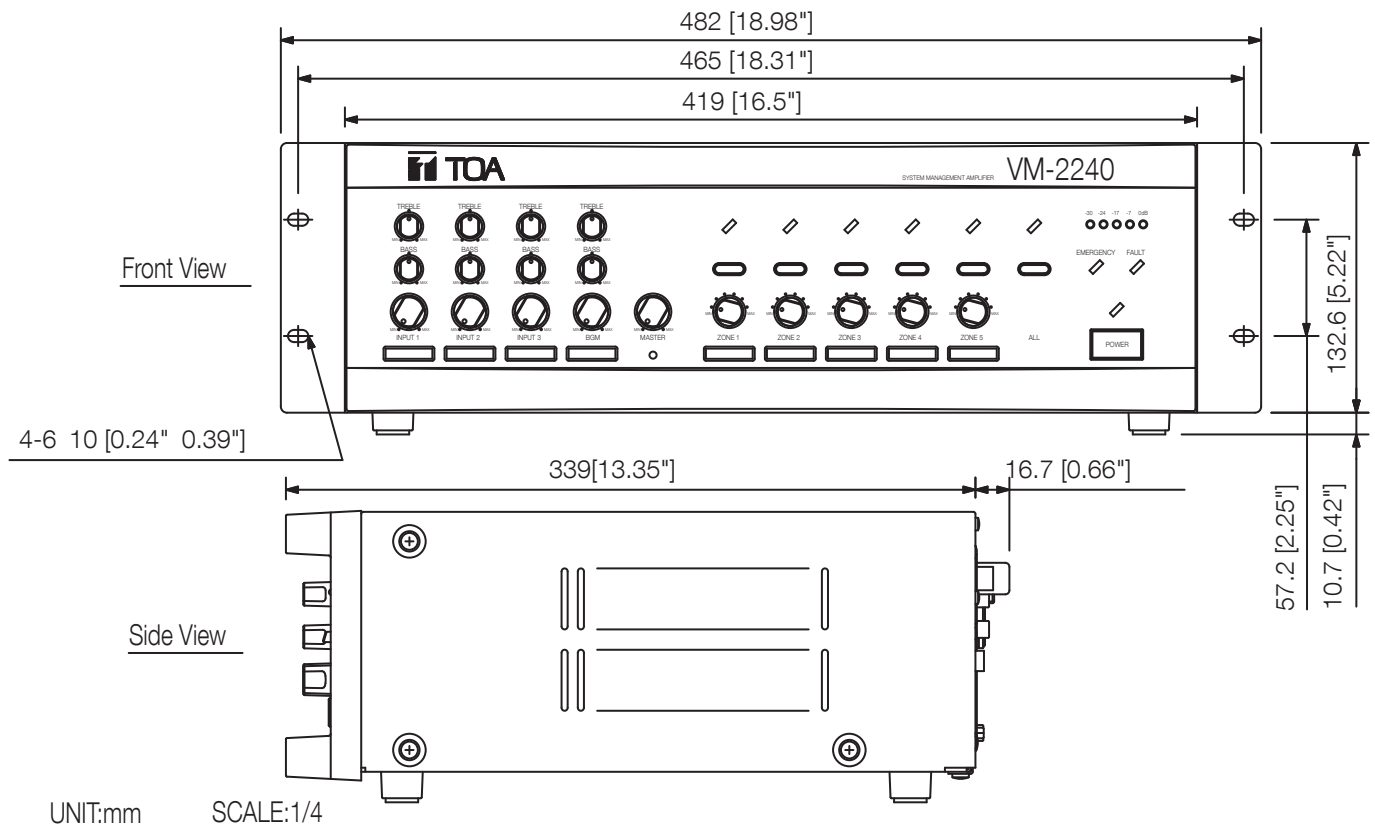
(\*9) An optional SV-200MA Surveillance Board is required.

Dimensions

Magnified view when each optional board is mounted.



## Dimensions



## A&E specifications

Microprocessor-controlled PA management amplifier, as a table top unit or with optional brackets in standard 19-inch cabinet racks can be mounted. Three balanced inputs for microphone or recording with control inputs, height / low tone control and switchable phantom power via XLR combo jacks, transformers easily retrofitted. Input for telephone announcements. The output circuits 1-5 can be associated separately each of the above-mentioned inputs. Up to 4 auditable digital stations can be connected via an RJ-45 connection. Two audio inputs for background music with two cinch Sockets and level before controllers, as well as height / low tone control. There are 5 levels of priority. 100 V power amplifier with 240 Watt of power, idle-secure and short-circuit protected, easily convertible to 70 V or 50 v 5 output circuits, individually zuschalt-and adjustable in steps 0, - 3, 6,-10,-15 and -20 dB at any power sharing as well as a collective call key. Switching display using LEDs. In the transmission of signals with high-priority automatic bypass the volume control and display of duty call operation. Compulsory control contact for external volume control. 100V input to the 5 circles, output switchable by external duty call signal from parent PA headquarters, or switched-off device. According an exit before and after the total volume control to the use of additional amplifiers. Recording output for the master signal. Simple combination of up to 9 ELA management amplifiers to extend 45 circuits and power increase possible. Additional control inputs for: throwing the text rendering of the digital text storage, remote activation, start and stop of alarm texts, activation of the 100V-Eingangs. Fault status outputs for: power and emergency power supply, receivers and amplifier combination connection, errors in the text memory. Labels for the front taxable inputs and outputs. In emergency mode play of two texts for warning and evacuation. Digital text storage and monitoring module can be retrofitted.