TOA Electronics VX-3004F AMQ

TOA Electronics VX-3004F AMQ Voice Alarm System Frame User Manual

Model: VX-3004F AMQ

1. PRODUCT OVERVIEW

The TOA Electronics VX-3004F AMQ is a voice alarm system frame designed for use with TOA's VX-3000 Series rack-mount type voice evacuation systems. This unit complies with the European Standard EN54-16 for fire alarm systems, providing control for voice evacuation announcements and status indications.

It supports up to 4 amplifiers, configurable as 1 zone with 1 amplifier, 4 AB-zones, or 3 AB zones with a standby amplifier. The front panel features various indicators for amplifier status, fault conditions, and system operation, along with control buttons for acknowledgment, reset, and lamp testing.
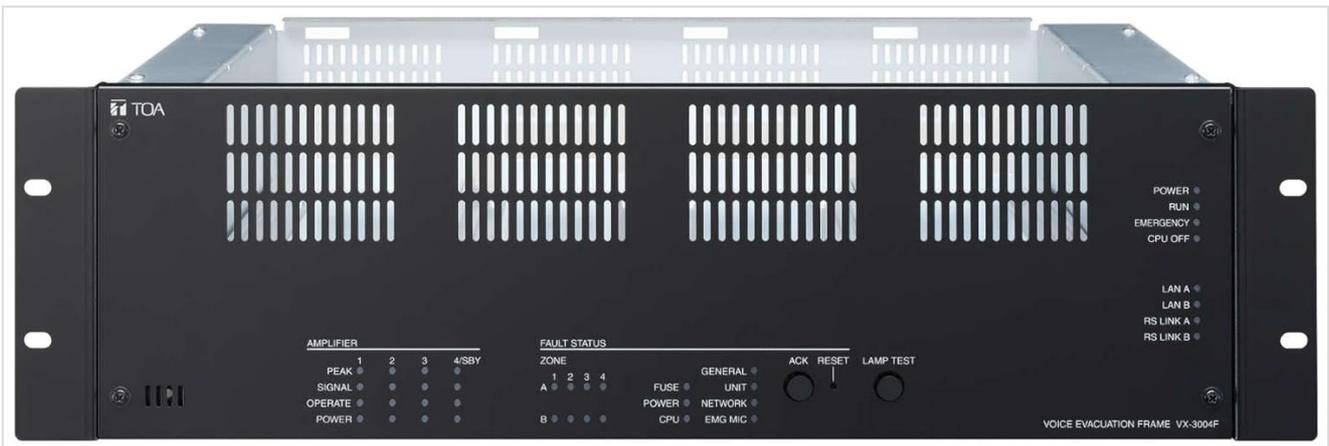
2. FRONT PANEL LAYOUT

Figure 1: Front Panel of the VX-3004F AMQ Voice Alarm System Frame.

The front panel of the VX-3004F AMQ provides visual feedback on the system's operational status and allows for basic control. Key areas include:

- **TOA Logo:** Brand identification on the upper left.
- **Amplifier Status Indicators:** Located on the lower left, these LEDs show the status for up to four amplifiers (1, 2, 3, 4/SBY). Each amplifier has indicators for **PEAK** (overload), **SIGNAL** (audio presence), **OPERATE** (active), and **POWER** (on).
- **Fault Status Indicators:** Positioned in the center, these LEDs indicate various system faults. They are categorized by **ZONE** (A and B, with indicators for 1, 2, 3, 4) and **GENERAL** faults (**FUSE**, **POWER**, **CPU**, **UNIT**, **NETWORK**, **EMG MIC**).
- **Control Buttons:** Three buttons are located to the right of the fault status indicators: **ACK** (Acknowledge), **RESET**, and **LAMP TEST**.

- **System Status Indicators:** On the upper right, these LEDs show overall system status: **POWER** (main power), **RUN** (system operating), **EMERGENCY** (emergency mode active), and **CPU OFF** (CPU not running).
- **Network/Link Indicators:** Below the system status, LEDs for **LAN A**, **LAN B**, **RS LINK A**, and **RS LINK B** indicate network and communication link activity.
- **Model Number:** "VOICE EVACUATION FRAME VX-3004F" is printed on the lower right.

3. INSTALLATION AND SETUP

3.1. Unpacking and Inspection

Carefully unpack the VX-3004F AMQ frame and inspect it for any signs of damage during transit. Ensure all components listed in the packing materials are present. If any damage or missing parts are found, contact your supplier immediately.

3.2. Mounting

The VX-3004F AMQ is designed for rack-mount installation. Secure the unit into a standard 19-inch equipment rack using appropriate mounting hardware. Ensure adequate ventilation around the unit to prevent overheating.

3.3. Power Connection

Connect the unit to a 20 - 33 V DC power source using the removable 4-pin terminal block. Ensure correct polarity and a stable power supply. The power consumption is 24 W for the frame only, and up to 90 W when RS Link is outputting 2A.

3.4. Network and Link Connections

- **LAN A, B:** Connect standard 100BASE-TX network cables to the RJ45 connectors for network communication.
- **RS Link A, B:** Use shielded Category 5 twisted pair (CAT5-STP) or greater cables for RS Link connections. These provide power feed up to 1A per connector.
- **DS Link:** Connect to DS LINK of power supply units using shielded Category 5 twisted pair (CAT5-STP) cables.
- **Analog Link:** Connect to other VX-3004F, VX-3008F, or VX-3016F units via the RJ45 connectors for analog input/output.

4. OPERATION

4.1. Powering On

Once all connections are secure, apply power to the unit. The **POWER** indicator on the front panel should illuminate. After a brief initialization period, the **RUN** indicator will light up, signifying normal operation.

4.2. Amplifier Status Monitoring

Monitor the amplifier status indicators for each of the four amplifier channels:

- **PEAK:** Illuminates when the amplifier output level is too high, indicating potential distortion.
- **SIGNAL:** Illuminates when an audio signal is present at the amplifier input.
- **OPERATE:** Illuminates when the amplifier is active and functioning.
- **POWER:** Illuminates when the amplifier module has power.

4.3. Fault Status Monitoring

The **FAULT STATUS** section provides critical information regarding system health. If any fault indicator illuminates, refer to the Troubleshooting section.

- **ZONE A/B (1-4):** Indicates a fault within a specific speaker zone (A or B) for channels 1 through 4.
- **FUSE:** Indicates a blown fuse within the unit.
- **POWER:** Indicates a power supply issue.
- **CPU:** Indicates a central processing unit malfunction.
- **UNIT:** Indicates a general unit fault.
- **NETWORK:** Indicates a network communication error.
- **EMG MIC:** Indicates a fault with the emergency microphone.

4.4. Control Buttons

- **ACK (Acknowledge):** Press to acknowledge a fault condition, which may silence an audible alarm or clear a flashing indicator.
- **RESET:** Press to reset the system after a fault has been resolved.
- **LAMP TEST:** Press and hold to illuminate all LED indicators on the front panel, verifying their functionality.

5. MAINTENANCE

5.1. Cleaning

Regularly clean the exterior of the unit with a soft, dry cloth. Do not use liquid cleaners or abrasive materials. Ensure ventilation openings are free from dust and obstructions.

5.2. Environmental Conditions

Ensure the unit is operated within its specified temperature and humidity ranges. Avoid exposing the unit to direct sunlight, excessive heat, moisture, or corrosive environments.

5.3. Firmware Updates

Periodically check the TOA Electronics website for any available firmware updates for the VX-3004F AMQ. Follow the provided instructions carefully for any update procedures.

6. TROUBLESHOOTING

This section provides guidance for common issues indicated by the front panel fault status LEDs.

Indicator	Possible Cause	Action
POWER (System Status) Off	No DC power supply, power cable disconnected.	Check DC power source and cable connections.
RUN Off	System initialization failure, CPU error.	Check CPU fault indicator. Power cycle the unit. If issue persists, contact support.
PEAK (Amplifier) On	Amplifier input signal too high, output overload.	Reduce input signal level or check speaker line impedance.
ZONE A/B (Fault Status) On	Fault detected in the specified speaker zone (e.g., open circuit, short circuit).	Inspect speaker lines and connections for the indicated zone.
FUSE (Fault Status) On	Internal fuse blown.	Contact qualified service personnel for fuse replacement. Do not attempt to replace fuses yourself.
POWER (Fault Status) On	Internal power supply malfunction.	Power cycle the unit. If the fault persists, contact support.
CPU (Fault Status) On	Central Processing Unit error.	Power cycle the unit. If the fault persists, contact support.
NETWORK (Fault Status) On	Network communication error.	Check LAN cable connections and network configuration.
EMG MIC (Fault Status) On	Emergency microphone fault.	Check emergency microphone connection and functionality.

After resolving a fault, press the **ACK** button to acknowledge the fault and then the **RESET** button to clear the fault condition and restore normal operation.

7. SPECIFICATIONS

Feature	Detail
Model	VX-3004F AMQ
Power Source	20 - 33 V DC, removable terminal block (4 pins)
Power Consumption	24 W (frame only) at 33V DC input, 90 W (RS Link: 2 A output) at 33 V DC input
LAN A, B	2 Connectors, 100BASE-TX, TCP, UDP, ARP, ICMP, RTP, IGMP, FTP, HTTP, NTP, RSTP, PCM (48 kHz, 16 bits)
RS Link A, B	2 Connectors, Max. 1 A power feed per connector, RJ45, Shielded Category 5 twisted pair cable (CAT5-STP) or greater
DS Link	RJ45, Shielded Category 5 twisted pair cable (CAT5-STP)
Analog Link	1 input, 1 output, RJ45 (for VX-3004F, VX-3008F, VX-3016F)
Finish	Panel: Surface-treated steel plate, black, 30 percent gloss, paint
Dimensions (L x W x H)	13.58 x 19.02 x 5.22 inches (34.5 x 48.3 x 13.25 cm)
Weight	16.76 lbs (7.6 kg)
Compliance	EN54-16

8. WARRANTY AND SUPPORT

8.1. Warranty Information

For detailed warranty information regarding your TOA Electronics VX-3004F AMQ, please refer to the warranty card included with your product or contact your authorized TOA Electronics dealer or distributor. Warranty terms and conditions may vary by region and purchase location.

8.2. Technical Support

Should you encounter any issues not covered in this manual or require further technical assistance, please contact your local TOA Electronics technical support or authorized service center. Ensure you have your product model number (VX-3004F AMQ) and serial number available when seeking support.