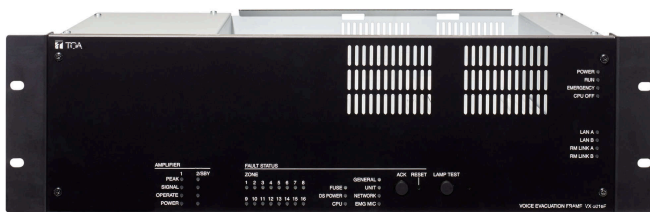


VX-3016F AMQ

VOICE ALARM SYSTEM FRAME



The VX-3016F AMQ is a device designed to control the Voice evacuation announcements of TOA's VX-3000 Series rack-mount type voice evacuation system which is compliant with the European Standard EN54 for fire alarm systems. It has audio input terminals and can output the amplified audio signals to the speaker lines when the optional power amplifier modules are mounted. It is possible to make an Emergency Warning Broadcast assigned a higher priority than the Emergency broadcast. Two patterns of the Emergency broadcast can be activated simultaneously. Compatible with network, the system can be configured in distributed arrangement. Features include the following functions: Digital signal processing function that enables appropriate acoustic adjustment for individual input sound sources and output amplifiers, Feedback suppressor function that automatically suppresses acoustic feedback when it occurs, VOX function that allows start/stop control of broadcast by way of an audio trigger, and ANC function that enables an ambient noise control. (The ANC function distinguishes between the unit's output sound and the ambient noise. The unit's output sound is not detected as noise.) Indicators that show such statuses as fault status and power amplifier signal status are provided. It has 16 speaker output channels.

The number of mountable amplifier modules is up to 2 when used as zone amplifiers or a total of 2 when one is used as standby amplifier and the other as zone amplifier. When one module for zone amplifier use is mounted, the VX-3016F can be used as 1-bus/16-zone output speaker selector. When 2 modules for zone amplifier use are mounted, it can be used as 2-channel 1-bus/8-zone output speaker selector.

Zones can be expanded by connecting the unit having amplifier module(s) and the one having no amplifier module. As the VX-3016F is equipped with Standby amplifier input/output terminal, the standby amplifier, when mounted, can be shared among VX-3000F units.

Key features

- 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 filtertypes and compressor
- Output DSP: flexible filtertypes, compressor and delay up to 2.7 sec.

Specifications

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	<p>Number of Connectors: 2 (LAN A, LAN B)</p> <p>Network I/F: 100BASE-TX</p> <p>Network Protocol: TCP, UDP, ARP, ICMP, RTP, IGMP, FTP, HTTP, NTP</p> <p>Spanning tree Protocol: RSTP</p> <p>Audio Transmission System: TOA Packet Audio(*1)</p> <p>Audio Encoding Method: PCM</p> <p>Audio Sampling Frequency: 48 kHz</p> <p>Audio Quantifying Bit number: 16 bits</p> <p>Connection Device: VX-3004F, VX-3008F, VX-3016F, NX-300, VX-3000PM, VX-3000CT, and Switching HUB</p> <p>Connector: RJ45 connector</p> <p>Connection Cable: Category 5 twisted pair cable (CAT 5) or greater</p> <p>Number of Stages of Cascade connection: Up to 7</p> <p>Maximum Cable Distance: 100m (328.08 ft)</p>
RS Link A, B	<p>Number of Connectors: 2 (RS LINK A, RS LINK B)</p> <p>Audio input level; 0 dB (*2)</p> <p>Power feed: Max. 1 A per connector</p> <p>Connector: RJ45 connector</p> <p>Connection Cable: Shielded Category 5 twisted pair cable (CAT5-STP) or greater</p> <p>Maximum cable distance: 1200 m (3937.01 ft)</p>
DS Link	<p>Connection Device: DS LINK of Power supply units</p> <p>Connector: RJ45 connector</p> <p>Connection Cable: Shielded Category 5 twisted pair cable (CAT5-STP)</p> <p>Maximum Cable Distance: 5 m (16.4 ft)</p>
Analog Link	<p>Number of Connectors: 1 input, 1 output</p> <p>Connection Device: VX-3004F, VX-3008F, VX-3016F</p> <p>Connector: RJ45 connector</p> <p>Connection Cable: Shielded Category 5 twisted pair cable (CAT5-STP) or greater</p> <p>Maximum Cable Distance: 800 m (2624.67 ft)</p>
Audio Input 1, 2, 3, 4	<p>4 inputs</p> <p>Sensitivity</p> <p>Line: -20 dB(*2)/ MIC: -60 dB(*2)</p> <p>LINE/MIC/ANC sensor (changeable with setting software)</p> <p>Gain Control: volume adjustable with volume control (internal front panel) $-\infty$ to 0 dB</p> <p>Input Impedance: 47kΩ electronically-balanced</p> <p>Frequency Response: 40 Hz - 20 kHz \pm1 dB (at DA CONTROL LINK, 0 dB output)</p> <p>Distortion: 1% or less (at DA CONTROL LINK, 0 dB output, 1 kHz)</p> <p>Signal to Noise Ratio: 60 dB or more (at DA CONTROL LINK, A-weighted)</p> <p>Phantom Power Supply: 24 V DC, can be set with setting software</p> <p>Connector: Removable terminal block (6 pins): 2</p>
Audio Input	<p>16 inputs, no-voltage make contact input, open voltage: 24 V DC; short-circuit current: 2 mA</p> <p>Fault Detection System: Short circuit, Open circuit; Method: Voltage detect; Connector: RJ45 connector</p>
Control Input 1, 2	<p>16 inputs, no-voltage make contact input, open voltage: 24 V DC, short-circuit current: 2 mA</p> <p>Fault Detection System: Short circuit, Open circuit, Method: Voltage detect</p> <p>Connector: RJ45 connector</p> <p>Connection Cable: Shielded Category 5 twisted pair cable (CAT5-STP) or greater</p>
Emergency Control IN	<p>Input 2: Isolated voltage input, -24 to +24 V</p> <p>Connector: RJ45 connector</p> <p>Connection Cable: Category 5 twisted pair cable (CAT5) or greater</p>
VOX Function	<p>Threshold: -60 to 0 dB (1 dB steps)</p> <p>Hysteresis: 0 to +10 dB; Hold time: 10 ms - 10 s</p> <p>Settable for each audio input</p>

Control Output 1, 2	<p>General outputs : 8 with CONTROL OUTPUT 1 Exclusive outputs : 3 with CONTROL OUTPUT 2; GENERAL FAULT, CPU FAULT, CPU OFF No-voltage make contact, electrical contact output, control current: 10 mA ; withstand voltage: 28 V DC Connector: RJ45 connector Connection cable: Shielded Category 5 twisted pair cable (CAT5-STP)- or greater</p>
ATT/Control Output	<p>16 outputs, no-voltage make contact, relay contact (NC, NO, C), control current: 2 mA to 5 A; withstand voltage: 125 V AC, 40 V DV Connector: Removable terminal block (12 pins) x 4</p>
Digital Signal Processing	
Feedback Suppressor (FBS)	<p>7 filters (auto) Settable for each audio input and RS LINK (A/B)</p>
Equalizer/Filter	<p>3 bands for each audio input and RS LINK (A/B), 6 bands for each amplifier output Parametric equalizer: 20 Hz - 20kHz, ±15 dB, Q 0.267 - 69.249 Filtering: High-pass filter 20- Hz - 20 kHz, 6 dB/oct, 12 dB/oct Low-pass filter 20- Hz - 20 kHz, 6 dB/oct, 12 dB/oct High shelving filter 6 - 20 kHz, ±15 dB Low shelving filter 20 - 500 kHz, ±15 dB Notch filter (amplifier output only) 20 Hz - 20 kHz, Q: 8.651 - 69.249 All-pass filter (amplifier output only) 20 Hz - 20 kHz, Q: 0.267 - 69.249 Horn equalizer (amplifier output only) 20 kHz, 0 to +18 dB (0.5 dB steps)</p>
Compressor	<p>Threshold: -20 to 0 dB (1 dB steps) Ratio: 1:1, 1.1:1, 1.2:1, 1.3:1, 1.5:1, 1.7:1, 2:1, 2.3:1, 2.6:1, 3:1, 4:1, 5:1, 7:1, 8:1, 10:1, 12:1, 20:1, ∞:1 Attack time: 0.2 ms - 5 s, Release time: 10 ms - 5 s Gain: -∞ to +10 dB, Knee type: hard knee, middle knee, soft knee</p>
Delay	<p>For each amplifier output, 0 - 2730 ms (0.021 ms steps)</p>
ANC (Ambient Noise Control)	<p>Amplifier output level control, Automatic sensor input reference level measuring, Sensor input reference level fine adjustment Maximum output signal level control: -15 to 0 dB Minimum output signal level control: -18 to -3 dB Sample time setting: 10 s, 20 s, 30 s, 1 min, 5 min Gain ratio setting: (Ambient noise: Output signal level) 6:3, 5:3, 4:3, 3:3, 3:4, 3:5, 3:6 Ambient noise measuring frequency setting: 20 Hz - 20 kHz, 3 points</p>
Program Timer	<p>Weekly program method; Daily program: 50 events, 10 types; Holiday program: 50 types</p>
Time Adjustment	<p>Control input, NTP</p>
Speaker Line	<p>16 channels 2 Earth terminals Max. Voltage/Current: 100 VRMS, 5 ARMS Connector: Removable terminal block (17 pins) x 1 Fault detection system: Short circuit, Open circuit, Ground fault, Method: Impedance or End of line</p>
Standby Amplifier Input/Output	<p>Input: 1, Output: 1; Max. Voltage/Current: 100 VRMS, 5 ARMS; Connector: Removable terminal block (2 pins) x 2</p>
Extension Amplifier Input/Output	<p>Input: 1, Output: 1 ; Max. Voltage/Current: 100 VRMS, 5 ARMS ; Connector: Removable terminal block (2 pins) x 2</p>
Module Slot	<p>Number of modules: 2 DA CONTROL LINK: 2 DA OUTPUT LINK: 2 (Used only when a power amplifier module is installed)</p>
Indicators	<p>POWER (green): 1, RUN (green): 1, EMERGENCY (red): 1, CPU OFF (red): 1, LAN A (green): 1, LAN B (green): 1, RS LINK A (green):1, RS LINK B (green):1 FAULT STATUS (yellow) GENERAL: 1, UNIT: 1, NETWORK: 1, EMG MIC: 1, FUSE: 1, POWER: 1, CPU: 1, ZONE: 8 AMPLIFIER PEAK (red): 2, SIGNAL (green): 2, OPERATE (green): 2, POWER (green): 2</p>

Operation	Fault control switch: 2 (ACK/RESET) Test Switch: 1 (LAMP TEST) Setting Switch: ID NUMBER, RESET, IMPEDANCE, Setting (internal front panel)
Operating Temperature	-5°C to 45°C (23°F to 113°F)
Operating Humidity	90%RH or less (no condensation)
Finish	Panel: Surface-treated steel plate, black, 30% gloss, paint
Dimensions	483 x 132.6 x 345 mm
Weight	8.1 kg
Included Accessories	Rack mounting screw: 4, Removable terminal plug (2 pins): 4 Removable terminal plug (4 pins): 1 , Removable terminal plug (6 pins): 2 Removable terminal plug (12 pins): 2 , Removable terminal plug (17 pins) :1, CD (PC setting software): 1 , Ferrite clamp: 2