Architect & Engineer

Specifications

EN 54-16 Public Address, Background Music and Voice Alarm System



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# 1. EN54 PA/VA MAIN CONTROLLER & EXTENSIONS

## 1.1. Public Address, Background Music and Voice Alarm System’s Main Controller 8 x 120 W

The public address, background music and voice alarm system’s main controller is a compact EN 54‑16 certified PA/VA system that ensures a fast, safe and controlled emergency evacuation.

This unit represents a cost‑effective voice evacuation and public address system due to its cutting‑edge features, excellent audio quality and flexibility in just 2U: 8 class D amplifiers, 5 audio inputs, 8 x 8 audio matrix (1024 zones), touch screen, AES67, etc.

With the configuration software (included), it is possible to configure the equipment remotely and create events to perform actions in the system triggered by conditions of: input level, date & time, UDP command, a GPIO or button from multi-zone paging microphone.

Redundant controller functionality, allowing the system’s core to be backed up and protected against any failure or incident in the installation.

This enables two main controllers to be connected in a ring configuration, where one acts as the primary unit and the other as the backup. If the backup unit loses communication with the primary controller, it will take over and connect to the other amplifiers in the ring, ensuring that the public address and voice evacuation system to continue operating normally.

### General Features

* 5 audio inputs.
* 8 class D amplifiers with two configurations for 100 V/70 V lines: 8 class D amplifiers of 120 W per channel.
* Audio Matrix 8 x 8 (up to 1024 zones).
* 8 pre‑amp outputs for external PA amplifiers connection.
* Up to 32 ACSI devices connected with CAT5 UTP cable. Up to 128 ACSI Net devices.
* DSP: 7-band input/output parametric equalizer, loudness, sound enhancer, independent volume control per each I/0 channel and audio filters.
* Triple Ethernet port: FlexNet technology integrating IP Layer 3 AES67 digital audio, remote control and supervision, and for escalating the system with extension controllers in daisy‑chain mode with Flexnet technology (up to 1024 zones).
* 4,3'' frontal touch screen with access control.
* 4 GB of internal memory for pre-recorded messages.
* Integrated emergency microphone.
* Control for up to 32 attenuators.
* Integrated frontal loudspeaker for monitoring.
* 24 GPIO ports (10 supervised for integration with fire alarm control panel).

### Voice Alarm / Emergency Features

* EN 54‑16 and EN‑60849 certified.
* Detection and indication of failure in all emergency functions.
* Integration with fire alarm control panels.
* Pre‑recorded evacuation messages.
* Phased evacuation.
* Manual control of emergency states with access control.
* Recording output in emergency state.
* Emergency log.
* Loudspeaker line supervision.
* A+B connection (16 lines).
* Back up amplifier connection: 7+1 (120 W channels)

### Technical Specifications

| **Parameter** | **Specifications** |
| --- | --- |
| Power supply | 110-120 V / 220-240 V~ 50/60 Hz |
| Power consumption | 550 W max / 100 W at 1/8 output power |
| Frequency response | 20 – 20.000 Hz +/-2 dB |
| Signal to noise ratio | >98 dB, A-weighted |
| Distortion factor | <0,5% under IEC 62368-3 |
| Gain adjustment per channel | -100 dB -0 dB, 1 dB steps |
| DSP | Integrated. 48 kHz, 24 bits - 344 MIPS |
| FlexNet/ Audio over Ethernet | 2 x FlexNet redundant (automatic switching) / Ethernet 10/100 Mbits. Female RJ‑45 |
| Audio inputs | 5 x balanced audio 1 Vp, 0,707 Vrms. 10 KΩ, 3 Pin, Euroblock type |
| ACSI bus | 1 x balanced audio 1 Vp, 0,707 Vrms. 10 KΩ, Female RJ‑45, total 1000 m / 3280.8 ft |
| Pre-amp audio outputs | 8 x balanced audio 1 Vp, 0,707 Vrms. 100 Ω, 3 Pin, Euroblock type |
| Rec. audio / Ctrl. outputs | 1 x balanced audio, 1 Vp, 0,707 Vrms. 100 Ω / 0 – 5 V DC output 100 Ω, 4 Pin, Euroblock type |
| ATT control | 8 x override 24 V DC, 8 x 40 mA, 2 Pin, Euroblock type (4 pin connector) |
| Emergency control inputs | 10 x 0 – 5 V DC, monitored inputs, 2 Pin, Euroblock type (4 pin connector) |
| Emergency control outputs | 2 x relay contact isolated output, NO, max 60 V DC 130 mA, 2 Pin Euroblock type (4 pin connector) |
| General control (GPIO) | 14 x Control I/O, 0 - 5 V, 100 Ω, 3 Pin, Euroblock type |
| Virtual matrix | 128 x 1024 |
| Amplifier | 8 x 120 W (TOTAL MAX 960 W), 8 x 60 Wrms (TOTAL MAX 480 Wrms) Class D @ 70 / 100 V. Min load 83 Ω |
| Speaker outputs | 16 (8 dual managed lines) x 70/100 V. 2 Pin, Euroblock type (4 pin connector) |
| Speaker loop input | 16 (8 dual) x no voltage contact, 3 Pin, Euroblock type |
| Spare amplifier inputs | 8 x 120 W at 70 or 100 V, 2 Pin, Euroblock Type (4 pin connector) |
| Protection | Over-temperature, DC, infrasonic, short circuit, slow start-up, overload, start-up test |
| Emergency power input | 1 x 20 – 25 V DC, 20 A, fused, 2 Pin, Euroblock type |
| Emergency power status inputs | 3 x NO - NC, 3 Pin, Euroblock type |
| Display | TFT 480 x 272 4,3'' with Touch Panel |
| Operating condition | -5 ºC to +45 ºC / 23 ºF to 113 ºF  5% to 95% Relative humidity (no condensation) |
| Finish | Front: Fe, Grey RAL 7016  Back: Fe, Black RAL 9005  Case: Al, Black RAL 9005 |
| Weight | 13.5 kg / 29.76 lb |
| Dimensions (W x H x D) | 483 mm x 88 mm x 455 mm / 19” x 3.46” x 18” |
| Accessory | 2 x rack mounting, male Euroblock connectors, installation screws, 4 x rubber foot, 1 x power cable 2 m / 6.56 ft (EU Type), 1 x Ethernet cable 2 m / 6.56 ft |

## 1.2. PA/VA Extension Controller 4 x 250 W

Extension controller and amplifier with 4 channels and 1000 W total, with a maximum of 500 W per channel (power sharing) for the EN 54-16 PA/VA main controller.

This extension unit can scale the main system with 4 more zones as it includes 4 class D power amplifier channels at 100 V or 70 V lines.

It includes a triple IP port for IP ring connection with the main controller unit, AES67 digital audio communication, as well as control and supervision.

It has dual amplification outputs, for A+B or class A connection, and input for backup amplification channel configuration. Includes analogue priority audio input.

The extension is fully configurable with the configuration software (included with main controller). It is possible to configure remotely the unit as part of the whole PA/VA system and create events to perform actions in the system triggered by conditions of: input level, date & time, UDP command, a GPIO or button from a multi-zone paging microphone.

### General Features

* 4 class D amplifiers of 250 W or 2 amplifiers of 500 W for 100 V/70 V lines.
* 4 pre-amp outputs for external PA amplifiers connection.
* DSP: 7-band input/output parametric equalizer, loudness, sound enhancer, independent volume control per each output channel and audio filters.
* Triple Ethernet port: for AES67 IP Audio, remote control and supervision, and for escalating the system with extension controllers in daisy-chain mode with Flexnet technology (up to 1024 zones).
* Control for up to 16 attenuators.
* 6 supervised contact relays for integration with fire alarm control panel.

### Technical Specifications

| **Parameter** | **Specifications** |
| --- | --- |
| Power supply | 110-120 V / 220-240 V~ 50/60 Hz. |
| Power consumption | 900 W max / 200 W at 1/8 output power/ 40 W Standby |
| Frequency response | 20 — 20.000 Hz +/-3 dB |
| Signal to noise ratio | >100 dB, A-weighted |
| Distortion factor | <0,1 % TYP -10 dBV under IEC 62368-3 |
| Gain adjustment per channel | -100 dB -0 dB, 1 dB steps |
| DSP | Integrated. 48 kHz, 24 bits - 344 MIPS |
| FlexNet (audio over Ethernet + control) | 3 x FlexNet Redundant (automatic switching), Ethernet 10/100 Mbits. Female RJ-45 |
| Pre- amp audio outputs | 4 x Balanced audio 1 Vp, 0,707 Vrms. 100 Ω 3 Pin, Euroblock Type |
| Prio / Ctrl. Input | 1 x Balanced audio, 1 Vp, 0,707 Vrms. 10000 Ω / 0 - 5 V DC input 10000 Ω, 4 Pin, Euroblock Type |
| ATT control | 4 x Override 24 V DC, 8 x 40 mA, 2 Pin, Euroblock Type (4 pin connector) |
| Emergency control Inputs | 6 x 0 - 5 V DC, monitored inputs, 2 Pin, Euroblock Type (4 pin connector) |
| Emergency control Outputs | 2 x Relay contact Isolated Output, NO, Max 60 V DC 130 mA, 2 Pin Euroblock Type (4 pin connector) |
| Amplifier | 4 x 500 W (TOTAL MAX 1000 W), 4 x 250 Wrms (TOTAL MAX 500 Wrms) Class D @70 /100 V. Min load 40 Ω / 20 Ω |
| Speaker outputs | 8 (4 dual managed lines) x 70 /100 V. 2 Pin, Euroblock Type (2 pin connector) |
| Speaker loop Input | 8 (4 dual x No Voltage Contact inputs, 3 Pin, Euroblock Type. |
| Spare amplifier inputs | 4 x 500 W @ 70 / 100 V, 2 Pin, Euroblock Type (4 pin connector) |
| Protection | Over-temperature, DC, infrasonic, short circuit, slow start-up, overload. Start-up test. |
| Emergency Power Input | 1 x 20 - 28 V DC, 32 A, fused (32 A), 2 Pin, Euroblock Type (2 pin connector) |
| Emergency Power status Inputs | 3 x NO - NC, 3 Pin, Euroblock Type |
| Operating Condition | -5 ºC to +45 ºC / 23 ºF to 113 ºF  5 % to 95 % Relative humidity (No condensation) |
| Finish | Front: Fe, Grey RAL 7016  Back: Fe, Black RAL 9005  Case: Al, Black RAL 9005 |
| Weight | 9,8 Kg / 21,61 lb |
| Dimensions | 483 mm x 88 mm x 455 mm / 19” x 3,46” x 18” |
| Accessory | 2 x Rack mounting, Male Euroblock connectors, installation screws, 4 x Rubber foot, 1 x Power cable 2 m / 6,56 ft (EU Type), 1 x Ethernet Cable 2 m / 6,56 ft. |

## 1.3. PA/VA Extension Controller 4 x 500 W

Extension controller and amplifier with 4 channels and 2000 W total, with a maximum of 1000 W per channel (power sharing) for the EN 54-16 PA/VA main controller.

This extension unit can scale the main system with 4 more zones as it includes 4 class D power amplifier channels at 100 V or 70 V lines.

It includes a triple IP port for IP ring connection with the main controller unit, AES67 digital audio communication, as well as control and supervision.

It has dual amplification outputs, for A+B or class A connection, and input for backup amplification channel configuration. Includes analogue priority audio input.

The extension is fully configurable with the configuration software (included with main controller). It is possible to configure remotely the unit as part of the whole PA/VA system and create events to perform actions in the system triggered by conditions of: input level, date & time, UDP command, a GPIO or button from a multi-zone paging microphone.

### General Features

* 4 class D amplifiers of 500 W or 2 amplifiers of 1000 W for 100 V/70 V lines.
* 4 pre-amp outputs for external PA amplifiers connection.
* DSP: 7-band input/output parametric equalizer, loudness, sound enhancer, independent volume control per each output channel and audio filters.
* Triple Ethernet port: for AES67 IP Audio, remote control and supervision, and for escalating the system with extension controllers in daisy-chain mode with Flexnet technology (up to 1024 zones).
* Control for up to 16 attenuators.
* 6 supervised contact relays for integration with fire alarm control panel.

### Technical Specifications

| **Parameter** | **Specifications** |
| --- | --- |
| Power supply | 110-120 V / 220-240 V~ 50/60 Hz. |
| Power consumption | 900 W max / 200 W at 1/8 output power/ 40 W Standby |
| Frequency response | 20 - 20.000 Hz +/-3 dB |
| Signal to noise ratio | >100 dB, A-weighted |
| Distortion factor | <0,1 % TYP -10 dBV under IEC 62368-3 |
| Gain adjustment per channel | -100 dB -0 dB, 1 dB steps |
| DSP | Integrated. 48 kHz, 24 bits - 344 MIPS |
| FlexNet (audio over Ethernet + control) | 3 x FlexNet Redundant (automatic switching), Ethernet 10/100 Mbits. Female RJ-45 |
| Pre- amp Audio Outputs | 4 x Balanced audio 1 Vp, 0,707 Vrms. 100 Ω 3 Pin, Euroblock Type |
| Prio / Ctrl. Input | 1 x Balanced audio, 1 Vp, 0,707 Vrms. 10000 Ω / 0 – 5 V DC input 10000 Ω, 4 Pin, Euroblock Type |
| ATT control | 4 x Override 24 V DC, 8 x 40 mA, 2 Pin, Euroblock Type (4 pin connector) |
| Emergency control Inputs | 6 x 0 - 5 V DC, monitored inputs, 2 Pin, Euroblock Type (4 pin connector) |
| Emergency control Outputs | 2 x Relay contact Isolated Output, NO, Max 60 V DC 130 mA, 2 Pin Euroblock Type (4 pin connector) |
| Amplifier | 4 x 1000 W (TOTAL MAX 2000 W), 4 x 500 Wrms (TOTAL MAX 1000 Wrms) Class D @70 /100 V. Min load 20 Ω / 20 Ω |
| Speaker Outputs | 8 (4 dual managed lines) x 70 /100 V. 2 Pin, Euroblock Type (2 pin connector) |
| Speaker loop Input | 8 (4 dual x No Voltage Contact inputs, 3 Pin, Euroblock Type. |
| Spare Amplifier Inputs | 4 x 500 W @ 70 / 100 V, 2 Pin, Euroblock Type (4 pin connector) |
| Protection | Over-temperature, DC, infrasonic, short circuit, slow start-up, overload. Start-up test. |
| Emergency Power Input | 1 x 20 – 28 V DC, 32 A, fused (32 A), 2 Pin, Euroblock Type (2 pin connector) |
| Emergency Power status Inputs | 3 x NO - NC, 3 Pin, Euroblock Type |
| Operating Condition | -5 ºC to +45 ºC / 23 ºF to 113 ºF  5 % to 95 % Relative humidity (No condensation) |
| Finish | Front: Fe, Grey RAL 7016  Back: Fe, Black RAL 9005  Case: Al, Black RAL 9005 |
| Weight | 9,8 Kg / 21,61 lb |
| Dimensions | 483 mm x 88 mm x 455 mm / 19” x 3,46” x 18” |
| Accessory | 2 x Rack mounting, Male Euroblock connectors, installation screws, 4 x Rubber foot, 1 x Power cable 2 m / 6,56 ft (EU Type), 1 x Ethernet Cable 2 m / 6,56 ft. |

## 1.4. PA/VA Extension Controller 8 x 250 W

Extension unit for the EN 54-16 PA/VA main controller.

This extension unit scales the system with 8 more zones as it includes 8 class D power amplifier channels of 250 W at 100 V or 70 V.

It includes a triple IP port for IP ring connection with the main controller unit, AES67 digital audio communication, as well as control and supervision.

It has dual amplification outputs, for A+B or class A connection, and input for backup amplification channel configuration. Includes analogue priority audio input.

The extension is fully configurable with the configuration software (included with main controller). It is possible to configure remotely the unit as part of the whole PA/VA system and create events to perform actions in the system triggered by conditions of: input level, date & time, UDP command, a GPIO or button from a multi-zone paging microphone.

### General Features

* 8 class D amplifiers of 250 W for 100 V or 70 V lines.
* 8 pre-amp outputs for external PA amplifiers connection.
* DSP: 7-band input/output parametric equalizer, loudness, sound enhancer, independent volume control per each output channel and audio filters.
* Triple Ethernet port: for AES67 IP audio, remote control and supervision, and for escalating the system with extension controllers in daisy-chain mode with Flexnet technology (up to 1024 zones).
* Control for up to 32 attenuators.
* Integrated frontal loudspeaker for monitoring.
* 12 supervised contact relays for integration with fire alarm control panel.

### Technical Specifications

| **Parameter** | **Specifications** |
| --- | --- |
| Power supply | 110-120 V / 220-240 V~ 50/60 Hz. |
| Power consumption | 900 W max / 200 W at 1/8 output power/ 40 W Standby |
| Frequency response | 20 - 20.000 Hz +/-3 dB |
| Signal to noise ratio | >96 dB, A-weighted |
| Distortion factor | <0,5 % under IEC 62368-3 |
| Gain adjustment per channel | -100 dB -0 dB, 1 dB steps |
| DSP | Integrated. 48 kHz, 24 bits - 344 MIPS |
| FlexNet (audio over Ethernet + Control) | 3 x FlexNet Redundant (automatic switching), Ethernet 10/100 Mbits. Female RJ-45 |
| Pre-amp Audio Outputs | 8 x Balanced audio 1 Vp, 0,707 Vrms. 100 Ω, 3 Pin, Euroblock Type |
| Rec. Audio / Ctrl. Outputs | 1 x Balanced audio, 1 Vp, 0,707 Vrms. 100 Ω / 0 – 5 V DC output 100 Ω, 4 Pin, Euroblock Type |
| ATT Control | 8 x Override 24 V DC, 8 x 40 mA, 2 Pin, Euroblock Type (4 pin connector) |
| Emergency Control Inputs | 10 x 0 - 5 V DC, monitored inputs, 2 Pin, Euroblock Type (4 pin connector) |
| Emergency Control Outputs | 2 x Relay contact Isolated Output, NO, Max 60 V DC 130 mA, 2 Pin Euroblock Type (4 pin connector) |
| Amplifier | 8 x 250 W (TOTAL MAX 2000 W), 8 x 120 Wrms (TOTAL MAX 960 Wrms) Class D @ 70/100 V. Min. load 40 Ω |
| Speaker Outputs | 16 (8 dual managed lines) x 70 /100 V. 2 Pin, Euroblock Type (4 pin connector) |
| Speaker Loop Input | 16 (8 dual) x No Voltage Contact inputs, 3 Pin, Euroblock Type. |
| Spare Amplifier Inputs | 8 x 250 Wrms @ 70/100 V 1, 2 Pin, Euroblock Type (4 pin connector) |
| Protection | Over-temperature, DC, infrasonic, short circuit, slow start-up, overload. Start-up test. |
| Emergency Power Input | 1 x 20 - 28 V DC, 20 A, fused (20 A), 2 Pin, Euroblock Type (2 pin connector) |
| Emergency Power Status Inputs | 3 x NO - NC, 3 Pin, Euroblock Type |
| Operating Condition | -5 ºC to +45 ºC / 23 ºF to 113 ºF  5 % to 95 % Relative humidity (No condensation) |
| Finish | Front: Fe, Grey RAL 7016  Back: Fe, Black RAL 9005  Case: Al, Black RAL 9005 |
| Weight | 15 Kg / 33,07 lb |
| Dimensions (W x H x D) | 483 mm x 88 mm x 455 mm / 19” x 3,46” x 18” |
| Accessory | 2 x Rack mounting, Male Euroblock connectors, installation screws, 4 x Rubber foot, 1 x Power cable 2 m / 6,56 ft (EU Type), 1 x Ethernet Cable 2 m / 6,56 ft. |

## 1.5. PA/VA Extension Controller 4 x 500 W for Low Impedance Lines

Extension controller and 4 x 500 W amplifier for the EN 54-16 PA/VA main controller.

This extension unit can scale the main system with 4 more zones as it includes 4 class D power amplifier channels at 4 Ohms.

It includes a triple IP port for IP ring connection with the main controller unit, AES67 digital audio communication, as well as control and supervision.

It has dual amplification outputs, for A+B or class A connection, and input for backup amplification channel configuration. Includes analogue priority audio input.

The extension is fully configurable with the configuration software (included with main controller). It is possible to configure remotely the unit as part of the whole PA/VA system and create events to perform actions in the system triggered by conditions of: input level, date & time, UDP command, a GPIO or button from a multi-zone paging microphone.

### General Features

* 4 class D amplifiers of 500 W at 4 Ohms.
* 4 pre-amp outputs for external PA amplifiers connection.
* DSP: 7-band input/output parametric equalizer, loudness, sound enhancer, independent volume control per each output channel and audio filters.
* Triple Ethernet port: for AES67 IP Audio, remote control and supervision, and for escalating the system with extension controllers in daisy-chain mode with Flexnet technology (up to 1024 zones).
* Control for up to 16 attenuators.
* 6 supervised contact relays for integration with fire alarm control panel.

### Technical Specifications

| **Parameter** | **Specifications** |
| --- | --- |
| Power supply | 110-120 V / 220-240 V~ 50/60 Hz. |
| Power consumption | 900 W max / 200 W at 1/8 output power/ 40 W Standby |
| Frequency response | 40 - 20.000 Hz +/-3 dB |
| Signal to noise ratio | >100 dB, A-weighted |
| Distortion factor | <0,1 % under IEC 62368-3 |
| Gain adjustment per channel | -100 dB -0 dB, 1 dB steps |
| DSP | Integrated. 48 kHz, 24 bits - 344 MIPS |
| FlexNet (audio over Ethernet + control) | 3 x FlexNet Redundant (automatic switching), Ethernet 10/100 Mbits. Female RJ-45 |
| Pre-amp Audio Outputs | 4 x Balanced audio 1 Vp, 0,707 Vrms. 100 Ω 3Pin, Euroblock Type |
| Prio / Ctrl. Input | 1 x Balanced audio, 1 Vp, 0,707 Vrms. 10000 Ω / 0 - 5 V DC input 10000 Ω, 4 Pin, Euroblock Type |
| ATT control | 4 x Override 24 V DC, 8 x 40 mA, 2 Pin, Euroblock Type (4 pin connector) |
| Emergency control Inputs | 6 x 0 - 5 V DC, monitored inputs, 2 Pin, Euroblock Type (4 pin connector) |
| Emergency control Outputs | 2 x Relay contact Isolated Output, NO, Max 60 V DC 130 mA, 2 Pin Euroblock Type (4 pin connector) |
| Amplifier | 4 x 500 Wrms @ 4 Ω / 4 x 250 Wrms @ 8 Ω (TOTAL MAX 1000 Wrms) Class D. Min Load 4 Ω |
| Speaker Outputs | 8 (4 dual managed lines) x 70 /100 V. 2 Pin, Euroblock Type (2 pin connector) |
| Speaker loop Input | 8 (4 dual x No Voltage Contact inputs, 3 Pin, Euroblock Type. |
| Spare Amplifier Inputs | 4 x 500 W@ 4 Ω, 2 Pin, Euroblock Type (4 pin connector) |
| Protection | Over-temperature, DC, infrasonic, short circuit, slow start-up, overload. Start-up test. |
| Emergency Power Input | 1 x 20 - 28 V DC, 32 A, fused (32 A), 2 Pin, Euroblock Type (2 pin connector) |
| Emergency Power status Inputs | 3 x NO - NC, 3 Pin, Euroblock Type |
| Operating Condition | -5 ºC to +45 ºC / 23 ºF to 113 ºF  5 % to 95 % Relative humidity (No condensation) |
| Finish | Front: Fe, Grey RAL 7016  Back: Fe, Black RAL 9005  Case: Al, Black RAL 9005 |
| Weight | 9,8 Kg / 21,61 lb |
| Dimensions | 483 mm x 88 mm x 455 mm / 19” x 3,46” x 18” |
| Accessory | 2 x Rack mounting, Male Euroblock connectors, installation screws, 4 x Rubber foot, 1 x Power cable 2 m / 6,56 ft (EU Type), 1 x Ethernet Cable 2 m / 6,56 ft. |

# 2. EN54 PA/VA ACCESSORIES

## 2.1. AES67 and ACSI Net Converter

Network audio converter that allows sending and receiving 2 channels of audio over IP networks at level 3.

It has 2 bidirectional ACSI ports, 1 of them with redundant capacity, allowing connection of up to 32 additional devices per unit through the ACSI v2 protocol.

Ethernet communication is via ACSI Net protocol. This enables ACSI v2 devices to expand up to 4096 units, such as microphones and emergency panels, by networking them, while maintaining EN 54 certification.

Suited for rack or desktop installations.

### General Features

* AES67 high quality IP audio transmission and reception 48 Khz 1ms.
* ACSI v2 protocol with the capability to connect up to 32 devices on the bus.
* Integrated DSP 2x2 audio channels.
* ACSI Net audio channel encryption.
* LED system status indicators (Power, Fault, Failure and Emergency).

### Technical Specifications

| **Parameter** | **Specifications** |
| --- | --- |
| Supply | 110 - 240 V ~ Adapter to 24 Vdc/0.5 A included |
| Consumption | 5 W typical. Maximum 15 W (ACSI Devices) |
| Phantom power supply | 24 Vdc input 1 |
| Frequency response I/O | 20 Hz-20 kHz +/-0,05 dB |
| Distortion Factor | <0.05% |
| S/N | >93 dB @1 Vrms |
| Audio Connectors | Euroblock connector |
| DSP Resolution | Matrix 2 x 2 48 kHz, 28 bits - 50 MIPS |
| MicroSD | 1 x microSD reader |
| GPIO | 8 I/O configurable TTL 5 V |
| Ethernet Interface | 2 x 100 Mbits female RJ-45. Redundant Port A with PoE PD 12 W IEE802.3at |
| Audio IP | AES67, 1 ms, 48 kHz, 24 bits |
| Audio IN/OUT | 1 x 1 10 kΩ input / 100 Ω output - 1 Vrms balanced audio. Euroblock 3 p |
| Switch | 2 x power input switch to ACSI bus, one per ACSI port |
| USB | 1 x product maintenance |
| Indicators | State: Power on, Fault, Failure, Emergency and USB detection |
| Operating Conditions | -5 ºC to +45 ºC  5% to 95% Relative humidity |
| Weight | 0.75 Kg |
| Dimensions (W X H X D) | 220.9 x 42.7 x 121.2 mm |
| Finish | Top: Material Fe - Color Grey RAL 7016  Base: Material Al - Color natural |

## 2.2. In-Wall Volume and Channel Controller

The volume and channel controller allows up to 99 programmable channels and volume control (0-9). Usually installed in local zone and connected via bus to the system, it offers source selection, volume control and lock function.

### General Features

* Installation in local zone and connected via bus to the system.
* 99 programmable channels
* Volume control (0-9).
* Bus RS-485
* 4 P terminal block.
* DIP switch.
* LCD Display of 2 x 8 character type.

### Technical Specifications

| **Parameter** | **Specifications** |
| --- | --- |
| Power supply | 12 V DC |
| Consumption | 1,2 W max. (100 mA) |
| Bus | RS-485 connects to the System's interface; the maximum communication distance is 1200 m (the maximum distance to the power supply is 500 m) 4P Terminal Board. |
| Channel setting | DIP switch |
| Display | 2 x 8 characters LCD |
| Environmental Conditions | Temperature -5 to 55 ºC, relative humidity 15 %-80 %. Anti-interference, confirms EN 55103-2, CE, CCC certified. |
| Dimension | 86,9 x 86,9 x 28,3 mm (width x high x long) |
| Appearance | ABS Material, White |
| Weight | 110 g |

## 2.3. Communication and Power Supply Adapter

Communication and power supply adapter RJ-45 for volume and channel controller.

It allows to connect up to 10 volume and channel controllers for 100 m distance using standard UTP cable.

### General Features:

* It allows to connect up to 10 units together.
* Only it is necessary one CAT 5 cable for the whole devices.

### Technical Specifications

| **Parameter** | **Specifications** |
| --- | --- |
| Input power port | Jack connector |
| Input serial port | RS-485 |
| Input communication and power port | CAT 5B |
| Installation length | Max 800 m (2 devices) / Min 100 m (10 devices) |
| Dimensions (wide x height x depth) | 132 x 42 x 86 mm |
| Weight | 600 g |

## 2.4. End of Line Device

The end of line device provides an accurate measurement of the impedance of the speaker line (400 R/200 R configurable load), to test the line integrity between the speakers and the PA/VA system. This allows to supervise the line until the last speaker without return cable, even when the line has smaller loads with just 1 or 2 speakers.

It is a small device, very simple to install in 70 V or 100 V speaker lines and with low power consumption. Several devices can be connected to the same speaker line. It is compatible with all EN54 PA/VA systems with the latest firmware version.

### General Features

* Supervision of 70 V or 100 V speaker lines.
* Easy connection and installation, surface mountable.
* Several devices can be connected to the same speaker line.
* Small dimensions.
* Low consumption.
* Higher accuracy on impedance measurements.
* Supervision until the last speaker, even in low load speaker lines.
* No return cables.
* 400 R/200 R configurable load for 19 kHz tone.
* Compatible with EN54 PA/VA systems with the latest firmware version.

### Technical Specifications

| **Parameter** | **Specifications** |
| --- | --- |
| Input | 100 V or 70 V PA line input, Max. consumption 15 mA, 2 Pin Euroblock type |
| Selector | 2 positions (400 R/200 R) |
| Enclosure | ABS, Black RAL 9005 |
| Weight | 35 g / 1,24 oz |
| Dimensions (H x W x D) | 66,3 mm x 20 mm x 50 mm / 2,61 in x 0,73 in x 1,97 in |
| Accessories | Male Euroblock connector |

## 2.5. Paging Microphone

High-performance desktop microphone for professional public address installations. It has lighting indicators to show active state, line busy or permission-to-speak granted.

Thanks to its internal microcontroller, it can work under different systems and with different operational modes: on/off button, push to talk button, TTL communication through 2 wires, advise-tone to initiate/cut communication and TTL control level selection.

It is an ideal paging microphone to be placed at any point of the installation due to its small dimensions, its elegant design and its high resistance material.

### General Features

* High performances dynamic capsule.
* Local power supply.
* Audio gain setting.
* Configurable contact relay for auxiliary system.
* Busy line and conceded-word indicators.
* Lighting indicator placed in the gooseneck.

### Technical Specifications

| **Parameter** | **Specifications** |
| --- | --- |
| Power supply | 5 V DC, 200 mA. |
| Frequency response | 200 - 15000 Hz (+/-2 dB). |
| Audio output | 750 mV 600 balanced |
| S/N ratio | 100 dB (A weighting) |
| Sensitivity | -43 dB. at 1 KHz |
| Direction | Axial polar hypercardioid diagram |
| Transducer type | Dynamic with mobile coil. |
| Dimensions | 125 x 45 x 125 mm (width x height x depth) |
| Length of gooseneck | 350 mm |
| Power consumption | 1 W |

## 2.6. Multi-zone Paging Microphone

High-performance digital paging station for EN54 PA/VA systems.

Up to 32 paging microphones can be connected in a bus configuration to the ACSI bus of the system via CAT5 cable. The ACSI bus allows a maximum distance of 1 Km and provides priority levels between the devices connected to the bus.

It has 8 buttons for paging to 8 zones and additional zone buttons can be added with expansion keyboards.

It features an “all-call” button, busy line signal and auto-lock function. The microphone offers an Event button that combined with the zone buttons allows a wide variety of system's functions such as launching pre-recorded messages, loading pre-sets or creating zone groups.

The sound processing has been configured to achieve high quality results on the paging of voice, in terms of distortion, sensitivity, bandwidth and signal/noise ratio.

It has an iron chassis to provide superior stability and protection against damages. All buttons are designed for intensive use.

### General Features

* 8-zone programmable buttons.
* System event activator.
* Recall function.
* Auto-lock function.
* Power-saving mode.
* LED indications for zone selection.
* LED indicators of the system's state (EMG, FLT or LINK).
* LED Indicators of busy and conceded word.
* Power directly from the system through the UTP cable.
* High performance durable microphone capsule.

### Technical Specifications

| **Parameter** | **Specifications** |
| --- | --- |
| Power supply | 5 V dc, Type A/B Mini USB connector |
| Power consumption | 200 - 500 mA |
| Frequency response | 200- 15000 Hz (+/-2 dB). |
| Signal to noise ratio | R> 98 dB, A-weighted |
| Sensitivity | -43 dB. at 1 KHz |
| Directional axis | Axial with hypercardioid polar diagram response. |
| Kind of transducer | Condenser. |
| Indicators | State: Emergency, Failure, Link, Busy, Busy Line, Conceded Word. 8 indicators selected Zone. Gooseneck includes an illuminated ring for conceded word. |
| Buttons | 3 x programmable functions, 1 x recall, 1 x select / unselect all zones, 8 x zone selection, 1 x Talk |
| ACSI Bus | 2 x Balanced Audio (In+Loop) 1 Vp, 0,707 Vrms. 10 KΩ, 2 x RJ-45 Female, Total 1000 m. / 3280,84 ft |
| Aux Mic Input | 1 x Unbalanced input, 15 mV, 47 KΩ, 1 x Minijack Mono 3,5 mm |
| Dimensions without gooseneck (W x H x D) | 126 x 53 x 139 mm / 4,96” x 2,08” x 5,47” |
| Gooseneck length | 450 mm / 17,72” |
| Operating Conditions | -5 ºC to +45 ºC / 23 ºF to 113 ºF  5 % to 95 % Relative Humidity (no condensation) |
| Finish | Front: Fe, Grey RAL 7042  Base: Fe, Black RAL 9005 |
| Weight | 0,73 Kg |

## 2.7. Expansion Keyboard for Multi-zone Paging Microphone

Expansion keyboard unit for multi-zone paging microphones.

It has 8 software programmable buttons for paging up to 8 public address zones.

It has an iron chassis to provide stability and protection against damage. All buttons are designed for intensive use.

### General Features

* 8 zones programmable buttons.
* Can connect up to 7 units to a multi-zone paging microphone.

### Technical Specifications

| **Parameter** | **Specifications** |
| --- | --- |
| Buttons | 8 x zone selection |
| Operating conditions | -5 ºC to +45 ºC / 23 ºF to 113 ºF  5 % to 95 % relative humidity (no condensation) |
| Material | Fe 1,5 mm / 0,15” |
| Color | Grey RAL 7016 and Black RAL 9005 |
| Dimensions (W x H x D) | 86 x 53 x 139 mm / 3.38” x 2.08” x 5.47” |
| Net weight | 0,40 Kg / 0,88 lb |
| Accessories | Fixation elements, microphone connection and label for button identification |

## 2.8. Voice Alarm Panel

The voice alarm panel is designed to provide EN54 PA/VA systems with evacuation system controls for different areas.

It allows to know the condition of the system and broadcast both live and pre-recorded alarm and evacuation warnings through up to 56 selection memories of evacuation zones.

This is possible because it can equip up to 7 expansion keyboards with 8 zone memories each one. Moreover, the expansion keyboards available allow it to adjust to the special features of each system.

The equipment also offers the chance to choose the source of the power supply between local or supplied through the ACSI bus. The ACSI bus allows a maximum total wiring of 1000 m (914.4 yd) and offers priority levels for the devices connected in bus mode.

It has functions such as volume control, dynamic sound adjustment and programmable buttons that allow other system functions such as pre-recorded messages broadcasting.

It has a metallic chassis that provides stability and protection against damage. All the buttons are designed for intensive use.

### General Features

* Up to 56 group memories of up to 8 zones per memory (448 zones of the system).
* Prior notice tone.
* Volume adjustment.
* Power supply indicator.
* Emergency condition general indicator.
* Fault condition general indicator.
* Link with system fault indicator.
* Power supply fault indicator.
* Emergency microphone fault indicator.
* Broadcasting of voice evacuation message indicator.
* Broadcasting of voice evacuation recorded message indicator.
* Broadcasting of voice alarm message indicator.
* Remote control indicator.
* Emergency controls, Reset, Acknowledge, Test, Alarm message, Evacuation message.
* Side port to connect up to 7 expansion keyboards.
* Priority configuration and operating parameters.
* Local or peripheral power supply.
* Wall or 19” rack installation.

### Technical Specifications

| **Parameter** | **Specifications** |
| --- | --- |
| Power supply | 4.5- 5.5 V DC, 1 x mini-USB AB |
| Power consumption | 200 - 500 mA (max with all the expansion keyboards) |
| Expansion keyboard consumption | 40 mA max |
| Frequency response | 200 Hz – 12000 Hz (+/- 2 dB) |
| Signal to noise ratio | >98 dB, A-weighted |
| Sensitivity | -43 dB (1 KHz) |
| Directionality | Axial, with hypercardioid type polar diagram |
| Type of transducer | Dynamic with moving coil |
| DSP | Integrated. 48 kHz, 24 bits – 172 MIPS |
| ACSI Bus | 2 x Identical ACSI ports: Balanced audio 1 Vp, 0,707 Vrms. 10 KΩ, female RJ-45, Total 1000 m / 3280 ft |
| Expansion Port | 1 x Pin row, 2 rows x 5 female contacts |
| Indicators | Condition: Emergency, General Fault, Remote Control  Fault: Link, Supply, Emergency microphone  Message in broadcast: Evacuation recorded, Warning recorded, live message |
| Buttons | Emergency, Reset, Confirmation, (EMG, RST, ACK)  1 button for talking (TALK)  Recorded message: Evacuation and Warning  Indicators test |
| Functions | Prior notice tone, volume control, DSA (Dynamic sound adjuster). Directionality until 448 system zones. |
| Microphone cable length | 500 mm / 13,75” |
| Dimensions without microphone (A x H x P) | 259 mm x 132 mm x 50 mm / 3,38” x 2,56” x 7,48” |
| Dimensions with microphone (A x H x P) | 259 mm x 132 mm x 93 mm / 3,38” x 2,56” x 7,48” |
| Keyboard/Rack complements dimensions (A x H x P) | 86 mm x 132 mm x 42 mm / 3,38” x 2,56” x 7,48” |
| Operating conditions | -5 ºC to +45 ºC / 23 ºF to 113 ºF  5 % to 95 % Relative Humidity (no condensation) |
| Finish | Fe, Grey RAL 7016 |
| Weight | 1 Kg |
| Expansion keyboard weight | 0,5 Kg |
| Voice alarm panel accessories | 1 x mini-USB AB male to USB A male  1 x Power Supply USB connector Type C (EU Type)  1 x Ethernet cable 2 m / 6,56 ft.  2 x 19” Rack installation accessories  1 x block accessory for wall installation |
| Expansion keyboard accessories | 1 x expansion port adaptor 2 x 5 contacts male-male  1 x connecting piece to voice alarm panel  4 x countersunk screw (4 x 8 mm) |

## 2.9. Expansion Keyboard for Voice Alarm Panel

Expansion keyboard for the voice alarm panel.

It has 8 software programmable buttons for paging to a maximum of 8 zones.

Each panel can equip up to 7 expansion keyboards through a port on the side that allows the installation on the right side of the main unit. Thus, it can address up to 448 zones.

### General Features

* 8 software programmable buttons.
* Up to 7 can be connected together.
* Busy zone indicators.
* Metallic chassis that provides stability and protection against damage.
* Local power supply.

### Technical Features

| **Parameter** | **Specifications** |
| --- | --- |
| Buttons | 8 x zone selection |
| Operating Conditions | -5 ºC to +45 ºC / 23 ºF to 113 ºF  5 % to 95 % Relative Humidity (no condensation) |
| Finish | Fe, Grey RAL 7016 |
| Weight | 0,85 Kg |

## 2.10. Dante-AES67 Converter

Advanced device designed to integrate and convert IP audio channels between the Dante protocol and the AES67 standard.

This equipment stands out for its ability to centrally manage up to 16 channels, which simplifies the administration and conversion of audio from any location.

Ease of use, allowing efficient and centralized management of audio channels. This not only optimizes operational efficiency but also provides a secure and reliable infrastructure for the management and conversion of digital audio.

### General Features

* 16 channels of digital audio from Dante® protocol to AES67 protocol.
* 3.5 mm female CTIA type jack connector audio input.
* USB ports.
* Ethernet Ports.
* HDMI port.
* RS-485/232 port.
* Rack mounting.