4EVAC

‘A NEW CLASS OF VOICE ALARM SYSTEMS THAT HAS ‘IT ALL’ IN A ONE BOX DESIGN!

COMPACT500

Compliant with: EN54-4, EN54-16, EN50130-4.
CPR number : 0560-CPR-152190001/00.

www.4evac.com

4EVAC - Compact500

4EVAC is a revolutionary new class of commercial Voice-Alarm Control and Indication Equipment solutions. 4EVAC consists of a comprehensive range of fully approved quality products designed and manufactured in Europe. As facilities and projects expand, so must the Voice-Alarm and life safety systems that protect them. 4EVAC is designed to appeal to both the end user and installer with the latest Voice-Alarm technology packaged in an easy to install single boxed solution. 4EVAC delivers you the ability to adapt to rapidly changing needs and to provide complete control over your Voice-Alarm system.

COMPACT500

Compact 500, Distributed VACIE concept:

The **Compact 500 Networked VACIE solution** is based on distributed boxed-amplifiers concept. This cutting-edge of digital audio-distribution technology, represents a variety of compact self-contained Wall-mounted Control and Indicating Voice-Alarm panels, creating a flexible and still simple to control distributed VACIE concept.

The **Compact 500** is a thoroughly '**system-in-a–box**' concept which offers the simplicity of a stand-alone conventional system and the benefits of global Network topology.

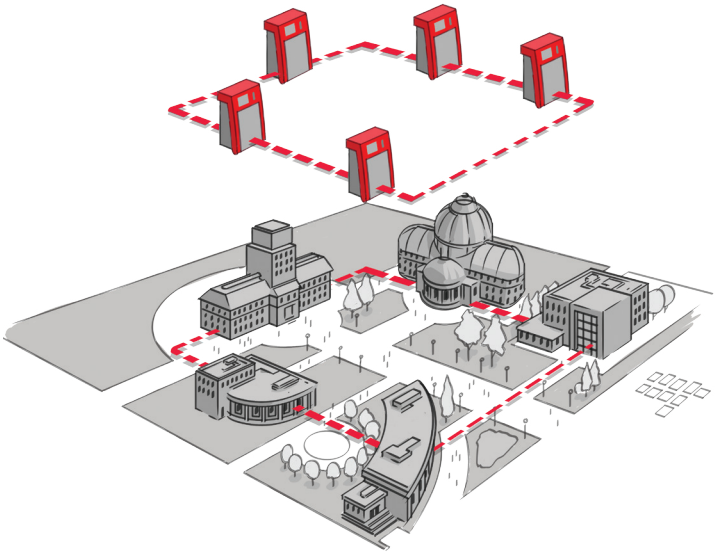
The **Compact 500** drives 2 'live-stream' audio channels and one serial data channel (RS485) over a redundant Global-Network-Loop into global zones and operates a 6-channel message players that send synchronized audio into the local zones. This way each **Compact 500** has the ability to generate 6 differents audio-streams playing into the local zones simultaneously.

Each **Compact 500** contains the necessary routing to serve up to 6 single zones of 6 x 100W RMS with additional active back-up amplifier. With a maximum of 255 boxed-VACIE panels in a Global Network, each serving 6-zones, a single installation can reach over 1500 speaker lines, cumulated into multiple paging zones within an architecture of 256 priorities.

Network topology:

Its redundant token ring network topology provides a communications platform for global incident warnings, control and information sharing that does not require any form of centralized processing.

Each **Compact 500** holds a copy of the global system settings on an exchangeable SD card and is able to continue working even in the event of total loss of communication. This ensures unparalleled survivability compared to conventional systems that rely on a central control device. This highly reliable concept is copied through the whole range of dedicated field devices.



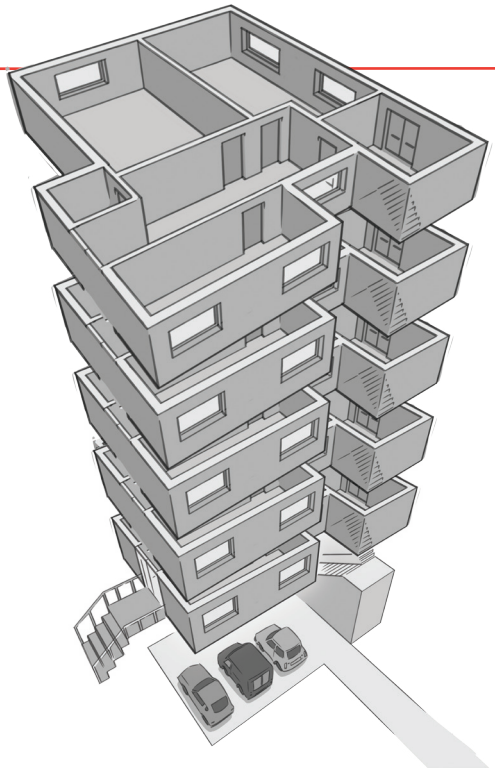
- Up to 255 nodes per system with 'peer to peer' system redundancy;
- Max distance between nodes: 250m (standard FTP CAT5e cable);
- No practical limit to network loop length;
- 200kbit datastream;
- 2 x 12kHz audio live-streams;
- Redundant ring technology;
- 2 live anti-parallel audio streams.
  - Upstream priority channel;
  - Downstream second channel and/or back-up channel.

Fully compliant:

In order to ensure peace of mind for both the installer and end user, 4EVAC products are third party approved and certified to relevant European standards.

4EVAC approvals go beyond the minimum requirements including EN54-16:2008, EN54-4:2006, and EN50130-4:2011. CPR number : 0560-CPR-152190001/00.

4EVAC new range of products stands for lower costs of installation, maintenance and ownership. Designed to meet from the basic normative requirements up to most demanding needs of engineers, facility managers, building owners and electrical contractors. 4EVAC range of products builds upon the field-proven design culture of experts in de fire-safety and voice-alarm market.



This shows a basic system configuration where the **Compact 500** fits perfectly! Serving a high-rise building structure.

Compact 500 is equipped with a wide range of pre- and post-processing software modules such as volume controllers, routing, mixing, switching and prioritizing. Processing components as; equalisers, limiters and delay-lines make **Compact 500** fit for the job.

The integrated local Message storage modules (WAV-format), with a total storage capacity of 16 audio files, can be distributed simultaneously over the 6 local output lines serving phased-evacuation. The status of the digital audio message storage and of the messages themselves are monitored.

All message-storage modules are synchronised between multiple **Compact 500** output lines for synchronized large area incident warning.

Equipped with 6 evacuation zones the wall-box is installed in the main entry area where it can be easily observed and controlled in case of an incident. The frontpanel controls are adequately accessible and the integrated firemens-microphone provides clear vocals into the evacuation zones.

System configuration

- Zone 1: Parking area, 85W (CH-1);
- Zone 2: Floor 1, 65W (CH-2);
- Zone 3: Floor 2, 95W (CH-3);
- Zone 4: Floor 3, 100W (CH-4);
- Zone 5: Floor 4, 85W (CH-5);
- Zone 6: Floor 5, 85W (CH-6);

Materials

- 1 x Compact 500;
- 3 x DA200;
- 1 x DA200 (back-up amp);
- 1 x Battery-set: 38AH.

DA200 - Amplifier Module

The DA200 is a state of the art powerful and highly efficient proven and robust Class D power amplifier. Sleep-mode will ensure that the overall powerconsumption is set to the lowest in its class.

When you hear our V6 howling, you better run!

Hardware

The **Compact 500** distributed VACIE comes in a single-box standard equipped with:

- Compliant battery charger for job fitting 24VDC back-up Batteries to comply with National standards;
- Battery backup storage for battery sizes from 12V/10AH to 12V/55AH;
- 2 x Global network ports (RJ45) redundant ring;
- 3 x Local network ports (RJ45) local I/O devices (Surveilled);
- 2 x BGM (One reserved for frontpanel Firemen microphone);
- 8 x GPI terminal block (Opto-isolated);
- 8 x GPO terminal block (Open collector);
- Secured output: EVAC & FAULT;
- Secured input: RESET, SILENCE & 6 x EVAC;
- 6 channel 16-message local message player
- USB interface;
- Pre-stored and exchangeable SD-card;
- 6 x 100V/50V line output transformers;
- 4 x DA200 amplifier modules:
  - 3 x DA200 amplifiers for 6-zones
  - 1 x DA200 amplifier for active back-up.

Audio customizing

DA200 dual-channel module (4 slots):

- 3 pcs. DA200, 6x100W RMS (6x70W RMS pure sinewave according to EN54-16);
- 2 pcs. DA200, 4 x 100W RMS (in case of a 4-zone 100W configuration);
- 2 pcs. DA200, 2 x 200W RMS (bridge-mode in case of a 2-zone 200W configuration i.e. combinations with LDB-01 – Loopdrive and SW8 Switching module;
- Fourth slot is reserved for a single back-up amplifier module DA200.

Control/Indications & Firemen microphone:

- Control and Indicating panel (Native language optional);
- Firemens-microphone with access-level protection (Level 2).

Amplifier module, DA200:

Depending on the application it can deliver up to 200 Watt continues power. Each DA200 amplifier delivers 2 x 100 Watt or can be linked into 1 x 200 Watt 'bridge mode' in case of return-loop zone methods in combination with Loopdrive or with the SW8 Switching module. Each **Compact 500** has by default adequate PSE and battery charging capacity to serve a maximum loudspeaker load of 600 Watt RMS that can be assigned to the DA200 as follows:

- 3 pcs. DA200, 6 x 100W RMS (6x70W RMS pure sinewave according to EN54-16);
- 2 pcs. DA200, 4 x 100W RMS (in case of a 4-zone 100W configuration);
- 2 pcs. DA200, 2 x 200W RMS (bridge-mode in case of a 2-zone 200W configuration i.e. combinations with LDB-01 – Loopdrive and SW8 Switching module.

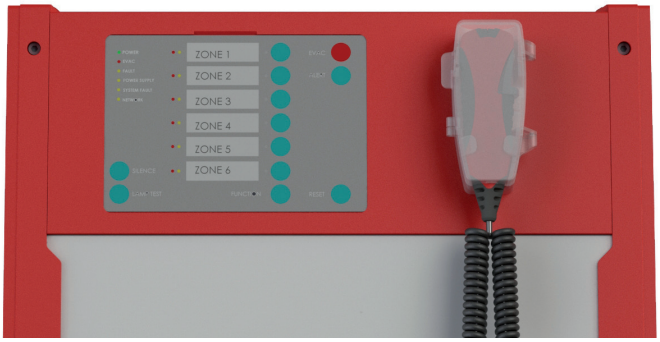
Or any of above combination within a maximum speaker load of 600W RMS (420W RMS pure sinewave according to EN54-16).

Functional features:

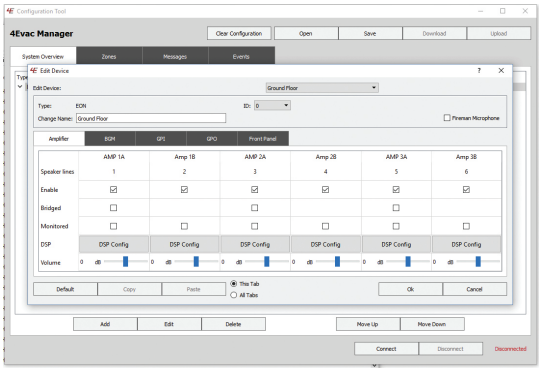
- AC End-of-line monitoring;
- Earth-leakage detection;
- RS485 Integration with LDB-01, Loopdrive Booster;
- Sleep-mode function automatically reducing standby requirements;
- Protected against overload (ie short circuit) by means of voltage controlled attenuator (VCA);
- Over temperature protection.

Features: Sophisticated Audio/Voice Evacuation

- True multi-channel audio allows each node to broadcast up to six simultaneous and unique alarm and alert messages;
- Synchronized pre-recorded audio signaling across nodes plus two 'live-streams' broadcast over all nodes to control common areas;
- Digitized voice messages utilizing custom .wav files;
- Paging from a central location and/or any node to broadcast into local or global zones.



Control/Indications
& Firemen microphone at access level 2



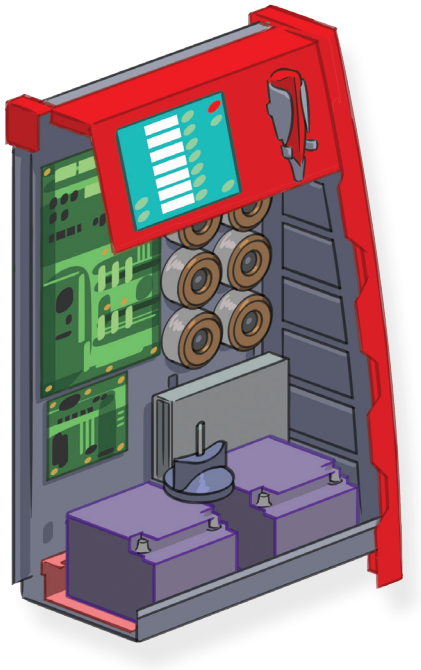
4EVAC Manager

Battery compartment:

The **Compact 500** comes with a special battery bracket that can hold batteries from a minimum of 12 V/10 AH to a maximum of 12 V/55 AH. The integral battery charger, PSE, has been certified to charged up to 12 V/55 AH within 24-hours.

For a standard fully equipped installation with 3-DA200 amplifiers and a backup DA-200 amplifier, that needs to run for the minimum normative period of 30 minutes on full-load and 24 hours in quiescent state, it requires 12 VDC 38 AH batteries.

In case de **Compact 500** is not fully equipped with the maximum number of DA200 amplifiers and/or not loaded to the maximum extent of 600W RMS, there is a choice of batteries in the range of 12 V/10 AH to 12 V/55AH, or when longer selfsupporting periods are required, i.e. when there is no maintenance contract in place.



4EVAC Manager

4EVAC Manager is a management application tool that provides a comprehensive application specific interface to your **Compact 500** networked system. The software provides an easily accessible view of your overall system status and makes system operation very easy through an intuitive and secure configuration tool that makes complex programming and service easier than ever.

4EVAC Manager is the ideal addition to your **Compact 500** system management in complex facilities.

- Configuration software supports all integrated system components;
- Firmware upgrades in the field;
- Flashcard exchange protocol for quick system update / programming without the direct need for a computer.

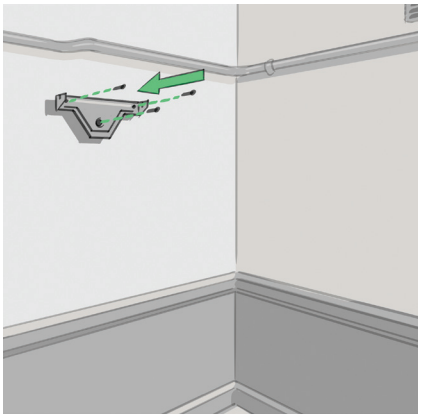
Mounting instructions

Ease of installation and engineering underpins the concept of the COMPACT 500. It runs through all the products. Installation is simplified by allowing electronics to be easily removed for first fix, whilst a simple but effective wall-bracket provides user friendly cabinet positioning by a single person. Configuration software and faultfinding tools speed up commissioning.

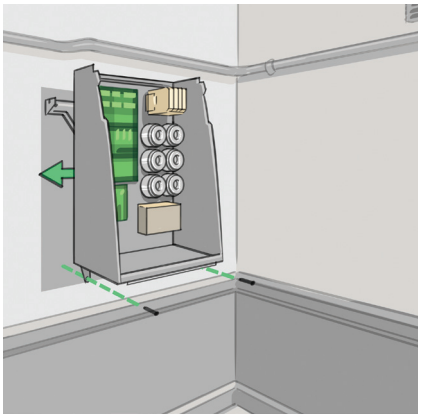
Easy to install, the COMPACT 500 stand-alone and flexible network solutions are ideal for, new construction, retrofit, upgrade, or expansion projects.

Easy to Install:

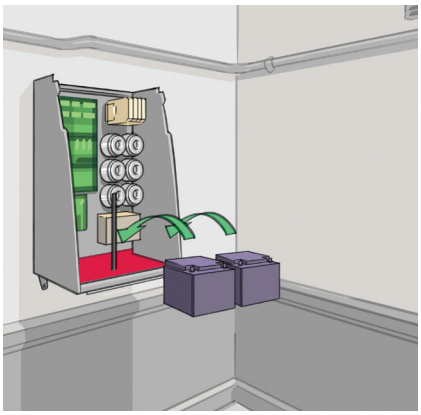
COMPACT500



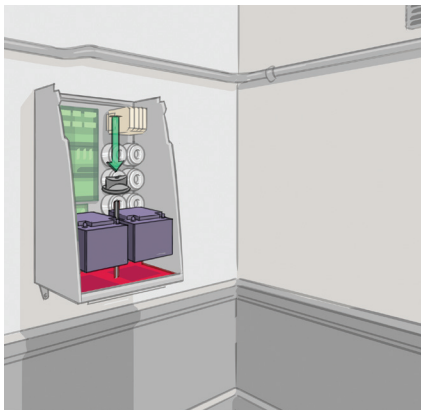
1. Position bracket on the wall.



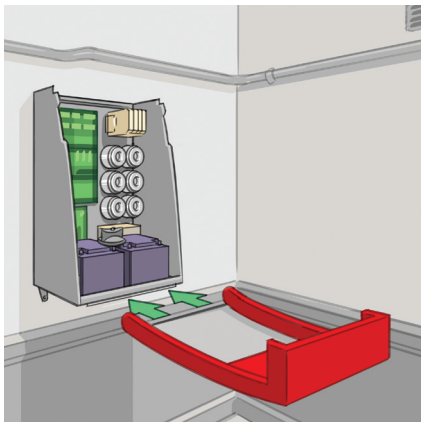
2. Hang cabinet and lock cabinet with bottom wall screws.



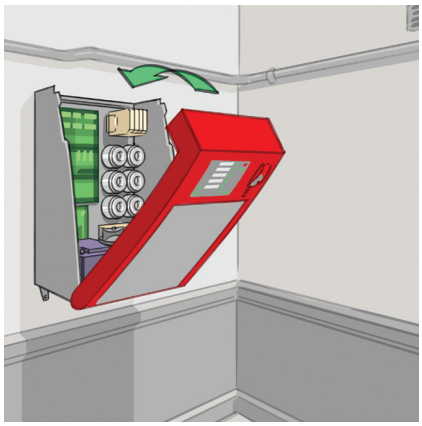
3. Add the batteries.



4. Fix the knob and twist.



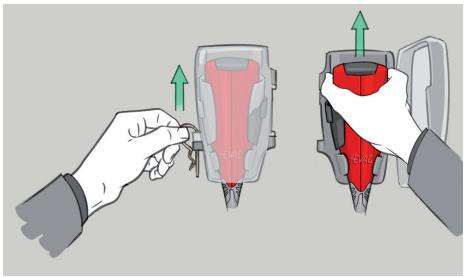
5. Slide front-cover in position.



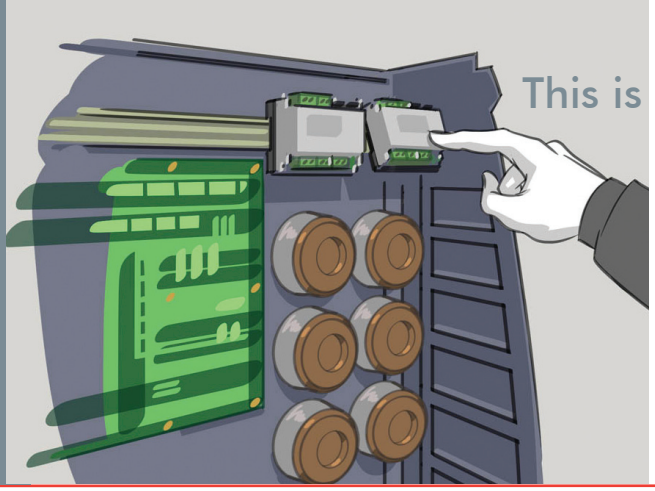
6. Close cabinet.

Access level protection

The 'clip' locks the firemen microphone. The clip needs to be remove in order to open the door and slide the microphone upwards out of the holder. This is required to achieve what they call 'access-level' protection.



1 - Open the door,
2 - Slide microphone out!



This is efficiency!

Small loads are a perfect match for the SW6-SWITCHING module. A simple way to distribute high power over multiple small loads. No rack-build, No engineering!

SW6-SWITCHING Module

SW6-SWITCHING module is an efficient and cost-saving add-on to the **Compact 500** concept. Directly connected to a single output line of the DA-200, the switching module splits the line into 6 additional surveilled speaker-lines for paging only.

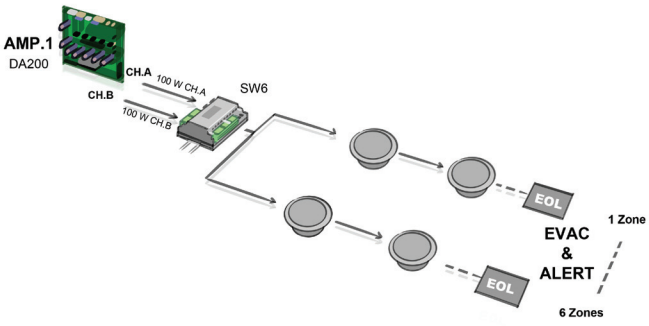
Using two amplifier channels the SW6 provides paging simultaneously with backgroundmusic for uninterrupted paging and BGM services. In case silenced zones are mixed with the system configuration, an internal (3rd) surveillance channel is pre-selected to guarantee 24/7 cable integrity detection.

A simple end-off-line module (EOL) is watching over the cable integrity for short-fault, open-fault and earth-leakage, receiving an AC carrier that is generated by the **SW6** for each line.

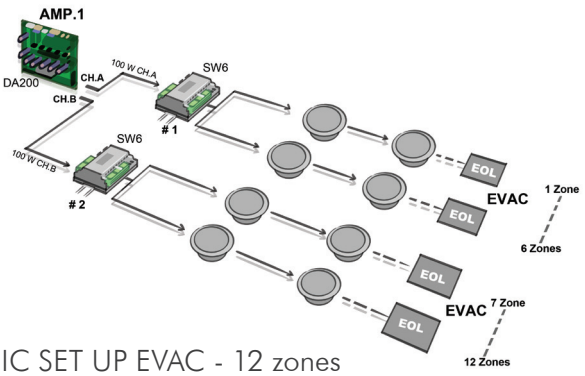
Each SW6 comes in a DIN-rail housing that sits on a reserved spot inside the **Compact 500** housing that can handle up to 2 modules, serving up to 12 additional switched speaker lines.

Each speaker line with a load as small as 1 Watt or as large as 200 Watt can listen to both BGM and/or PAGING. This dynamic way of audio distribution makes the **Compact 500** the most compact and versatile system in the industry.

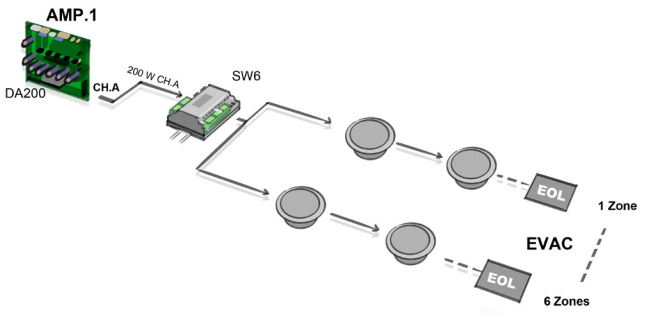
More zones, Fewer amplifiers



BASIC SET UP EVAC & ALERT - 6 zones



BASIC SET UP EVAC - 12 zones



BASIC SET UP EVAC - 6 zones

COMPACT500

Technical specifications

Number of zones	max. 6 local zones.
Total output power	600 W RMS (onde sinusoïdale pure de 420 W RMS selon EN54-16)
Power amplifiers	6 x 100 W, modular (2 channels per module). bridgeable up to 3 x 200 W.
Standby power amplifiers	2 x 100 W /1 x 200 W dedicated backup amplifiers.
Loudspeaker line monitoring	
Built-in	20 kHz AC monitoring with EOL module, short/open/impedance deviation
Loopdrive	loop DC monitoring with short-circuit isolators, short/open/earth leakage, EN54-17 certified.
Loudspeaker type	with 100V step-down transformer.
Voice messages	
Storage	max. 16 audio files x 1 minute, micro-SD card with content monitoring
Message player	max. 6 simultaneous local message playback.
Controls and indications	
General controls / indications	Lamp test button, silence button, power, evac, fault (power supply/system/network fault) LED indicators
Fault indications	Power supply, system, network and zone faults
Evac manual control	EVAC message, ALERT message, SILENCE, RESET, fireman mic with PTT button
Zone controls / indications	6 x configurable zone selection button, zone EVAC/ FAULT/BUSY LED indicators.
Fireman microphone	Integrated Fireman Mic with priority and electrical monitoring.
Power supply equipment	Built-in power supply system, EN 54-4 certified.
AC supply	110 – 230 V AC, 50/60 Hz
AC current consumption	max. 5.3 A @115 V AC / 2.65 A @230 V AC
Inrush current	40 A @115 V AC, 20 A @230 V AC
Power supply protection	Overload current limiting, over voltage shutdown, over temperature shutdown.
Battery requirements	
Type	Sealed, rechargeable lead-acid battery for stationary use
Capacity, charging time	10-55 AH, <24 h @ 80% capacity
Rated voltage	24 V DC (2 x 12 V)
Battery dimensions	2 batteries, each of max. 230 x 138 x 207 mm (LxWxH)
Battery weight	max. total 32.6 kg

Inputs	
2 x BGM	2 x independent balanced analog in, line-level mono, 22 kΩ input impedance
6 x EVAC in, 1x SILENCE in, 1x RESET in	monitored logic inputs, 4.7 kΩ +10 kΩ EOL resistor
8 x GPI	unmonitored logic inputs (pull-down, configurable active low/hi).
Outputs	
EVAC out, FAULT out	Potential-free relay output (configurable NO/NC)
8 x GPO	Open collector output (configurable NO/NC)
6 x Loudspeaker out	6 x 100 V transformer output, 20 kHz AC monitoring with Loopdrive EOL unit.
Amplifiers	
Type	Class D
Protection	Over load shutdown, over temperature shutdown
Backup amplifiers	2 dedicated backup channels, auto backup at end stage failure, auto restore
Efficiency	80% @ rated power
Output voltage	max. 100 V RMS
Rated power	100 W per channel, 200 W bridged
Output bandwidth	50 Hz – 20 kHz
SNR	>80 dB
THD + N	0.1% @ rated power.
Audio	
Frequency response	50 Hz – 20 kHz (local BGM) 100 Hz – 12 kHz (message player, network audio compressed)
Input- output latency	< 10 ms (stand-alone system)
Digital audio format	24 kHz sampling, ADPCM compressed
DSP features	HP/LP filter, multi-point parametric EQ delay.
Mechanical	
Dimensions (HxWxD)	80 x 52 x 28 cm
Packaging (HxWxD)	90 x 60 x 36 cm
Weight (without batteries)	29 kg (6 channel version)
Housing material	Steel / ABS
IP rating	IP 30
Mounting	Wall mounted box, wall bracket included.

Network system

General	
Max. number of devices in the network	255
Max. number of zones	255
Max. total system output power	102 kW
Number of simultaneous network life-audio-streams	2
Number of simultaneous network message playback	16
Network audio transmission latency	0.3 ms per device (Global Network).
Local network	
Architecture	Master-slave, up to 16 slave devices per EON device
Connection	3 x L-Net port, RJ-45, powered daisy chain, digital audio & control data
Cabling	X-over FTP CAT5e (or higher)
Current supply	max. 500 mA (up to 8 slave devices) per L-Net port
Max. length of local bus	
default	250 m
with twisted-pair extender	500 m.
Global network	
Architecture	Peer-to-peer, up to 255 EON devices
Connection	2 x G-Net port, RJ-45, powered redundant ring, digital audio & control data
Cabling	X-over FTP CAT5e (or higher) / multi-mode optical fiber
Current supply:	max. 500mA per port, reserved only for network extenders
Max. distance between devices	
default	250 m
with twisted-pair extenders	750 m
with multimode fiber extenders	2500 m.

SW6 Switching module

Electrical	
Number of zones	6 switching zones A and B
Total power	800 W max. 250 VAC/8 A (Dual-state type)
Loudspeaker line monitoring	YES, AC with Loopdrive EOL
Audio input	2 x 100 Volt (A and B).
Functional	
Status indicators	OPEN / SHORT line ch A selected / ch-B selected
General Fault contact	Pin-to ground (Programmable)
Serial data communication	L-NET protocoll (RS485)
Bus address range	00 - FF (0-255).
Power supply	
DC Power supply	18-36 VDC, nominal 24 VDC (L-NET)
DC Power consumption	85 mA and 200 mA
Mechanical	
Housing	Bopla CombiNorm-Connect
Protection rating	IP 30
Dimensions (WxHxD)	65 x 90 x 118 mm
Mounting	Quick-snap on DIN-rail, inside C500 housing.

EOL- End Of Line device (AC-line surveillance)

Electrical	
End-Of-Line	Resonance circuit for 20 kHz detection
Loudspeaker Line Load	10 - 200 W.
Mechanical	
Housing	Resin protected PCB
Protection rating	IP65
Dimensions (WxHxD)	40 x 20 x 5 mm
Mounting	Surface mount/ on-speaker mount
Connections	2 wires 100 mm, 1,0 mm^2 3 types of load-range settings by cutting wire on pcb for: 10-50 W 30-100 W 70-200 W.

Firemen - Microphones

4E-FMP

4E-FM

The 4EVAC series of paging consoles have been designed to provide a flexible user interface to the Compact 500 Voice Alarm systems. The console layout is clean and uncluttered, but contains all the system functions and status indication required by EN54-16. The handheld firemen's microphone is protected by a transparent protection cover to provide access-level protection as well as protection against accidental operation. The handheld firemen's microphone has a large speak bar and operation is both simple and intuitive.

COMPACT500

4E-FMP

Firemen Panel microphone.

Contains:

Optional /
service replacement device for the **Compact 500** control-panel.

- Handheld firemen's microphone with ALL-CALL button;
- Curl-cord working length: 1.10m;
- Electrical monitoring;
- Access-level protection by transparent protection cover;
- Dimensions: 160x50x40mm (LxWxH);
- Weight: 175gr.

4E-FM

Firemen-microphone, wall and desktop version.

Contains:

The 4EVAC series of paging consoles can be wired in a ring configuration for additional redundancy. The case has 2 x RJ45 entries to allow direct termination of the Local-Net interface cables for ring, spur or daisy-chain interfacing.

- Table-top extensions and wall-bracket are included;
- Handheld firemen's microphone with ALL-CALL button;
- Electrical monitoring;
- Curl-cord working length: 1.10m;
- Mandatory indicators; Power, Evac, Fault, Busy;
- Access-level protection by transparent protection cover;
- Auto-gain control on microphone chip;
- Addressable 0 - 255;
- 2 x RJ45 for single-point, redundant-point or daisy chain interfacing;
- Dimensions: 270x220x80mm (LxWxH);
- Weight: 250gr.

4E-FMT

Firemen-microphone with touchscreen control, wall and desktop version.

Contains:

- Table-top extensions and wall-bracket are included;
- Handheld firemen's microphone with ALL-CALL button;
- Electrical monitoring;
- Curl-cord working length: 1.10m;
- Mandatory indicators; Power, Evac, Fault, Busy;
- Access-level protection by transparent protection cover;
- Adressable: 0 - 255;
- 2 x RJ45 for single-point, redundant point or daisy chain interfacing;
- Auto-gain control on microphone chip;
- Configurable 7" touchscreen for paging control and status information;
- Dimensions: 270x440x80mm (LxWxH);
- Weight: 500gr.

4E-FMT

4E-FMTC

4E-CMT

4E-CMP

4E-FMTC

Firemen-microphone with touchscreen and gooseneck for commercial paging.

Contains:

In addition to the 4E-FMT, being able to address commercial messages within selectable zones, the 4E-FMT can be expanded with a gooseneck microphone. This allows for a whole variety of NON-life safety messages for commercial use within the **Compact 500** architecture.

- Table-top version;
- Electrical monitoring;
- Handheld firemen's microphone with ALL-CALL button;
- Curl-cord working length: 1.10m;
- Mandatory indicators; Power, Evac, Fault, Busy;
- Access-level protection by transparent protection cover;
- Auto-gain control on microphone chip;
- Addressable 0 - 255;
- 2 x RJ45 for single-point, redundant point or daisy chain interfacing;
- Configurable 7" touchscreen for paging control and status information;
- 30 cm gooseneck with dynamic hyper-cardioid microphone;
- Dimensions: 270x440x80mm (LxWxH);
- Weight: 600gr.

4E-CMT

Commercial paging console with goose-neck microphone and touch-screen.

Contains:

Touch-screen controlled paging console being able to address commercial messages within the **Compact 500** architecture.

- Table-top version;
- Auto-gain control on microphone chip;
- Addressable: 0 - 255;
- 2 x RJ45 for single-point, redundant point or daisy chain interfacing;
- Configurable 7" touchscreen for paging control and status information;
- 30 cm gooseneck with dynamic hyper-cardioid microphone;
- Dimensions: 270x220x80mm (LxWxH);
- Weight: 350gr.

4E-CMP

Commercial paging console with gooseneck microphone and push-button panel.

Contains:

6-zones Push-button controlled paging console being able to address commercial messages within the **Compact 500** architecture.

- Table-top version;
- Auto-gain control on microphone chip;
- Addressable: 0 - 255;
- 6-zone selection buttons and 1-PTT;
- 30cm gooseneck with dynamic hyper-cardioid microphone;
- 2 x RJ45 for single point or daisy-chain interfacing;
- Dimensions: 270x220x80mm (LxWxH);
- Weight: 350gr.

COMPACT500

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