

COMPACT 500 NETWORKED AND DECENTRALISED VOICE ALARM AND PUBLIC ADDRESS PAGING SYSTEM

The networked voice alarm and public address system Compact 500 is based on the concept of a standalone or decentralised network topology with multi-channel amplifier and built-in local power backup. This state-of-the-art, digital technology offers an audio distribution system which is a compact, all-in-one, wall-mounted solution for a flexible and easy to operate, EN54 certified voice system installation.

Compact 500 can be configured as a standalone or networked voice alarm system comprising of 6 loudspeaker circuits and consists of a central control unit with embedded amplifier cards: 3 dual-channel amplifier cards, DA200, for 6 zones, plus one dual-channel card, for dynamic back-up. Compact 500 is equipped with integrated emergency power manager in accordance with EN54-4. It has a front control panel with 6 x configurable zone buttons and indicators such as, zone evacuation / failure warning / busy LED displays and integrated fireman's microphone with priority and electrical monitoring in a protective cover at access level 2.

Compact 500 is an optimized voice alarm and/or public address system designed for small and medium-sized applications. A standalone central control unit, together with three DA200 two-channel amplifiers and additional DA200 backup amplifier, forms a complete voice alarm system for venues such as schools, smaller hotels, etc. The overall system, EN54 certified, achieves the performance requirements for voice alarm systems in accordance with EN54-16 and electro-acoustic emergency warning systems EN50849.

The Compact 500 central control unit has a built-in EN54-4 certified power supply equipment, complete with 4 ampere intelligent charger and safe battery compartment.

All power amplifiers are constantly monitored. In the event of a defective power amplifier, the backup amplifier will replace it dynamically. Switching takes place automatically and without interruption from the central control unit.

The loudspeaker lines are constantly monitored for short circuits, interruptions and impedance deviations, with support of an end-of-line module. Faulty loudspeaker lines are isolated without affecting other zones.

Each Compact 500 panel supports memory storage for 22 pre-recorded messages of max. 5 minutes each; they can be configured for alarm messages and signals (evacuation alarm, warning siren) and attention signals (siren, chime). The volume of each source and each amplifier channel can be regulated and supplemented with 5-point parametric audio filtering, which is available for each input and output. Faults are recognized, displayed and logged in compliance with standards within a few seconds.

The Compact 500 central unit features 2 analogue balanced inputs for background music or an external analog priority signal that can trigger an evacuation status.

As standard, the Compact 500 panel is equipped with 6 independent amplifier channels which can operate a total of 6 loudspeaker circuits, each loaded with a maximum of 100W. Amplifier channels can be bridged in pairs, creating more powerful loudspeaker lines, each capable of driving a 200W loudspeaker load. It is also possible to mix branch and loop line technology on the same central control unit. The number of loudspeaker circuits can be further expanded using the 4E-SW6 multiplexer units, for phased evacuation applications, the maximum number of loudspeaker circuits possible from a single Compact 500 panel is 18 lines, this limit can be extended further to 36 loudspeaker lines in non-phased evacuation applications.

The Compact 500 directs two live stream audio channels and a serial data channel (RS422) into remote zones via a redundant global network loop and controls a 6-channel message player that sends synchronized audio signals to the local zones. In this way, each Compact 500 can play multiple audio messages simultaneously in the local zones. All announcement memory modules are synchronized between several Compact 500 panels supporting a wide area of warning message playback.

Compact 500's central unit features 16 programmable discreet triggering inputs onboard, of which 8 are monitored. 3 dual-state potential-free system status output relays together with 8 programmable open collector GPO outputs, take care of feedback signals to external systems and control over auxiliary devices.

With up to 254 decentralized all-in-one Compact 500 units each with a control and display panel serving six zones or using an additional 4E-FMTC touchscreen microphone accessing up to 254 zones, this creates a single voice alarm system which can reach over 1500 loudspeaker lines in total, where architecture and priorities can be individually programmed in each of 254 evacuation zones.

Built-in Local Network ports, dedicated for local peripherals such as microphone stations, extend the physical range of the system and expand functionality.

The redundant dual ring network structure offers a fail-safe communication platform for alarm messages, control and information exchange that does not require central processing and in case of link failure remains fully functional.

Features:

- Compatible charger for 24 V DC backup batteries according to national standards
- Battery backup storage for 24V battery from 10Ah to 55Ah
- 2 x global network ports (RJ45) for redundant ring (monitored)
- 3 x local network ports (RJ45) for local I/O devices (monitored)
- 2 x BGM (one reserved for the fire station in the front panel)
- 8 x GPI terminal block (opto-isolated)
- 8 x GPO terminal block (open collector)
- Secured potential-free relay output: EVAC, FAULT, RESET
- Secure input: RESET, SILENCE & 6 x EVAC
- Local message player with storage of 22 audio files, total length 110 minutes
- USB interface
- Pre-programmed and exchangeable microSD card
- Control and display board (national language optional)
- Fire station with access protection (level 2)
- 20kHz AC end-of-line monitoring with impedance deviation measurement (EOL)
- Loop line technology with LoopDrive (54-17 certified)
- 6x 100W or 3x 200W (bridged) continuous power
 - Class D, 100V outputs
 - 100V / 70V / 50V step-up transformer
- 4 x DA200 amplifier modules:
 - 3 x DA200 amplifiers for 6 zones
 - 1 x DA200 amplifier for active backup
- Output power (at 230V mains voltage) 6 x 100W
- Output power (with 24V DC emergency power supply) 6 x 100W
- Frequency response 50Hz to 20KHz \pm 3dB
- Distortion factor <0.1% at 1 kHz sine
- Signal to noise ratio 90dB (A - weighted)
- Channel separation > 80dB
- Efficiency at maximum performance > 80%



Global network:

- Architecture peer-to-peer, up to 254 Compact 500 units
- Connection 2 x Global network port, RJ-45, redundant dual ring (powered), digital audio & control data
- X-over FTP CAT 5 (or higher) cabling or multimode fiber via additional module, EF-FSC-MM
 - Node-to-node distance max: 2500 m (2km on multimode fiber, 2 x 250m copper)

Local network:

- Architecture peer-to-peer, up to 16 local peripherals
- Connection 3 x Local network port, RJ-45, daisy chain (powered), digital audio & control data, configurable as redundant ring
- X-over FTP CAT 5 (or higher) cabling or multimode fiber via additional module, EF-FSC-MM
 - Node-to-node distance max: 250m (copper)

Mains voltage and emergency power supply:

- 110 - 230V AC 50 / 60Hz + 10% to -15%
- Lead-acid 10 -55 Ah, 24V nominal, 21.5V DC to 28.5V DC

Approvals:

- 0560-CPR-192190037
- EN 54-16
- EN 54-4
- EN 54-17 LoopDrive for ring line technology

Mechanical properties:

Type: Compact 500

Manufacturer: 4EVAC

Country of origin: Netherlands

Colour: RAL 9005 & RAL 7037

Degree of protection: IP30

Operating ambient temperature: -5 ° C to 40 ° C

Relative humidity: up to 93% (without condensation)

Dimensions: in mm (H x W x D) 880 height 520 width x 280 depth

Fastening: wall plugs, steel housing and wall mounting bracket included

Weight: 29 kg (without battery)