



## **EMERGENCY VOICE COMMUNICATION SYSTEM**

The EVCS has been designed to comply fully with the recommendations of BS5839 part 9 2003 which specifies the operation of such systems.

An EVCS is defined as a fixed bi-directional full duplex secure voice communication system for use in emergencies, and covers the operation of both fire telephone systems and disabled refuge systems. Where both systems are to be fitted to a building pt9 specifies these should form a single system.

The EVCS comprises of three system building blocks; these are: Control Handsets (both main & repeater types), 8 way exchanges, and outstations (as defined by BS5839pt9).

All critical paths on the system are monitored, and every fault event can be given a unique name. Lines are monitored for open circuit, short circuit or removal of a handset (on multi handset lines). The microprocessors in the exchanges are fully monitored and surveyed using a watchdog timer.

### **CONTROL HANDSET: VCM**

Control handsets are supplied in multifunction steel and aluminium enclosures, which can be wall, desk or rack mounted, and contain the following items:

- Monitored phone handset
- A 4 line 20-character LCD display for displaying calls, faults and status
- 12 key keypad for dialling
- 3 menu keys for menu navigation
- 4 Indicator LEDs (General fault, Supply Fault, CPU fault and Supply healthy)
- 2 Network interfaces with supply extraction
- Dimensions (HxWxD): 268mm x 275mm x 75mm



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## EXCHANGE UNIT: VCX8

The Exchange unit is a compact wall mount enclosure, which links the outstations to the control handsets and contains the following:

- AC Mains supply with a 1.5A monitored maintained battery charger.
- 8 telephone line interfaces.
- Connection Matrix
- Fault Relay Output (either local fault or general fault)
- 2 Network interfaces with supply addition
- Line Fault Indication (8 LEDs, one per line)
- Supply Status (3 Leds, AC Present, DC Present, Supply Fault)
- General Fault Led
- Dimensions (HxWxD): 395mm x 210mm x 80mm



## OUTSTATIONS: VCFHS/VCLHS/VCSHP/VCSHS

Outstations are supplied as type A (handset) as defined by pt9.

Type A Outstations comprise a steel enclosure, which is either flush mounted or surface mounted (separate cases are provided for each type) and has the following features:

- Monitored phone handset
- Full Duplex Speech
- Telecoil In handset
- High volume ringer
- Optional Lock
- Optional Strobe (requires additional supply & cables)
- Dimensions (HxWxD): 300mm x 150mm x 75mm



## Handset Codes:

VCFHS	Flush handset with push door
VCLHS	Flush handset with locking door
VCSHP	Surface handset with push door
VCSHS	Surface handset with locking door (square key)

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## **SYSTEM DESIGN**

The EVCS has been designed on a star and ring network topology; in the most cases this will reduce the cable requirements from all ring-based systems and star systems.

The topology consists of a ring formed from either 2 off four core 1mm CSA cables (soft skin up to 500m per leg, MICC 200m per leg) or 1 four pair 0.5mm CSA fire rated data cable (from either Draka Comteq or Fireshield for cable runs up to 500m).

The exchange units and the control handsets sit on this ring and communicate using a high speed balanced RS422 network, a bi-directional audio pair and a power pair, which provides an ELV maintained supply to the control handsets.

Each exchange unit contains a temperature compensated 1.5A VRSLA battery charger for a single 12V cell with a capacity from 3.2AH to 7AH.

Outstations connect to the exchanges using 2 core 1mm CSA cable (1Km run length for soft skin, 400m for MICC). Each exchange line can accommodate up to 4 type A outstations (although only one is recommended, the ability for four is to allow retrofit to earlier non pt9 systems).

## **System Operation**

All conversations on the EVCS system are under the command of the control handset, if multiple control handsets exist, the first operated one takes command of the system.

Pt9 envisages the majority of calls to be made by lifting the handset of an outstation. When this happens, the phone on the control point(s) will ring and the name of the calling extension will appear on the LCD display (all exchange lines can be given a unique 16 character name to identify themselves such as "Floor 1 Riser E").

The operator can then lift the handset and connect to the calling extension by pressing the # key. If more than one line is calling, all calling lines show in the display, and may be scrolled through with the navigate buttons, connected using the # key, or if already connected placed on hold using the # key a second time.

If the control wishes to ring an outstation they may do this in one of two ways, either by entering the number of the outstation using the keypad, or by scrolling through the names in the directory function and pressing # over the line they want. To call all extensions select ALL from the directory and press # or dial 0#.

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## GENERIC SYSTEM OVERVIEW:

