

VoCALL Compact 5 Line Fire Telephone & Disabled Refuge System



Installation and Maintenance Manual

Revision 1 - August 2007



Introduction

An EVCS is a fixed, secure, bi-directional, full duplex voice communication system to assist fire fighters in an emergency in high rise buildings or large sites where Radio communication may not work, and covers the operation of both fire telephones and disabled refuge systems.

The VoCALL Compact Emergency Voice Communications System (EVCS) is designed to fully comply with BS5839-Part 9:2003 (abb. Pt9) for use as a Fire Telephone system, Disabled Refuge Call system or as a combined system when both Fire Telephones and Disabled Refuge Points are required.

Suitability

Fire telephone systems are recommended for all public buildings and multi story buildings over four floors by BS5588.

Disabled Refuge systems are required in buildings where the public or disabled staff gain access to any floor other than the ground floor using lifts.

Product Overview

A VoCALL EVCS comprises of two functional blocks, the master handset and outstations, (type A, type B or Jack points), with the quantities of these basic units being adjusted to suit the application.

The VoCALL Compact EVCS has been designed on a star topology; in the most cases this will reduce the cable requirements from all ring-based systems. The topology consists of spurs formed from 1 off two core core 1mm CSA cables (soft skin enhanced up to 500m per leg, MICC 200m per leg) to each outstation.

Important Safety Information

This Equipment must only be installed and maintained by suitably skilled and competent person.

This Equipment is defined as Class 1 in EN60065 (Low Voltage Directive) and must be EARTHED.



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|----------------|---|
| CAUTION | INDOOR USE ONLY |
| WARNING | SHOCK HAZARD-
ISOLATE BEFORE OPENING |
| WARNING | TO REDUCE THE RISK OF FIRE OR
ELECTRIC SHOCK, DO NOT EXPOSE THIS
UNIT TO RAIN OR MOISTURE |
| WARNING | THIS UNIT MUST BE EARTHED |
| WARNING | NO USER SERVICABLE PARTS |

Each exchange unit requires a 3A spur, returning to a breaker clearly marked **EVCS DO NOT TURN OFF**. If the units are distributed around a site it is essential all units are on the same mains phase, as they are classified TEN 230V, powering from different phases can mean a 440V potential can be present in a unit during a major fault incident.



Anti-static handling guidelines

Make sure that electro-static handling precautions are taken immediately before handling PCBs and other static sensitive components

Before handling any static-sensitive items, operators should get rid of any electrostatic charge by touching a sound safety earth, such as a radiator. Always handle PCBs by their sides and avoid touching any components. PCBs should be stored in a clean, dry place that is free from vibration, dust and excessive heat.

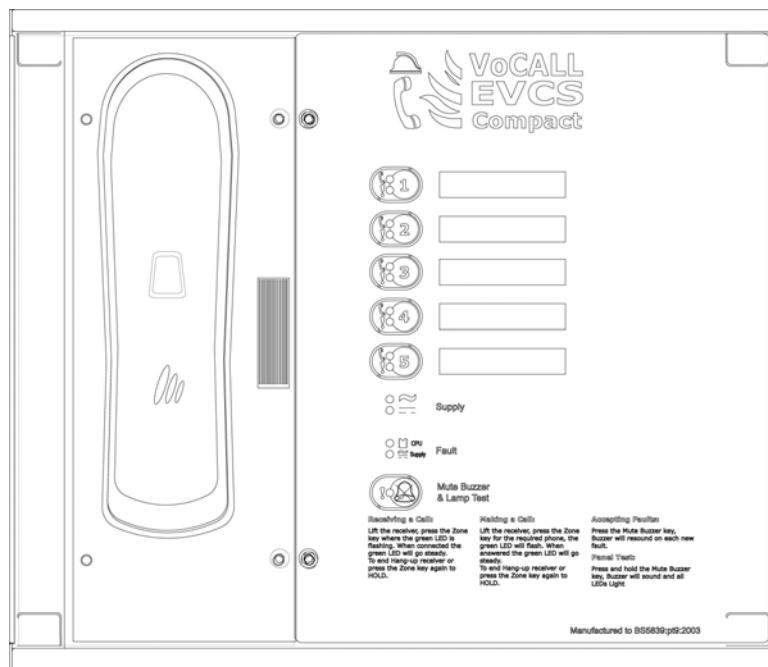
Storing the PCBs in a suitable cardboard box will also guard them against mechanical damage.

Unpacking the Unit

Remove the VoCALL Compact master from its packing, and check the contents against the following list:

1. VoCALL Compact EVCS control Unit.
2. Installation & maintenance manual (this document)
3. Unity User Guide & logbook.
4. Accessory pack with the following contents:-
 - a. Spare Mains Fuse.
 - b. 2.5mm AF Alan Key.
 - c. 5 off 10K 0.6W end of line Resistors (fitted to line sockets).
 - d. Crimped Battery Link Lead.

Using the HEX key supplied Open the right hand front cover.



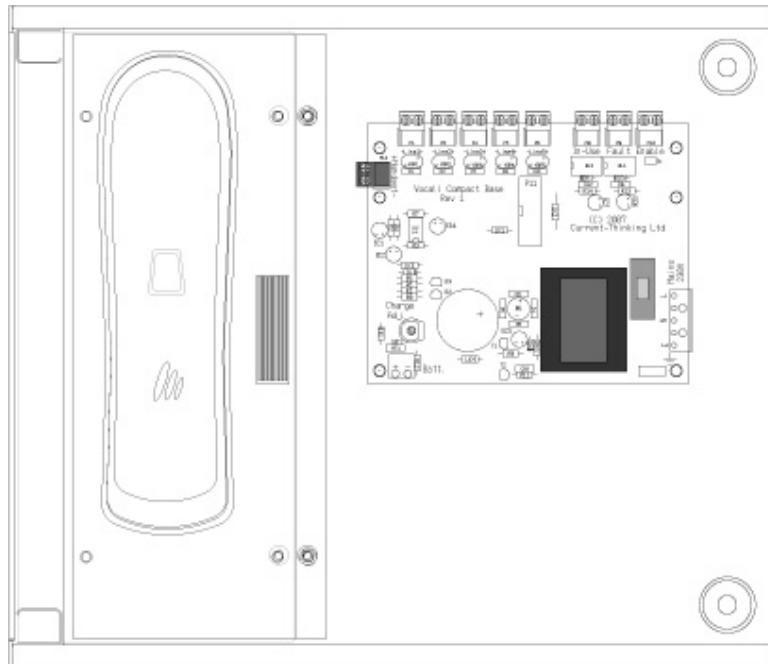
Verify the following items are present:

1. 5 off outstation Line connectors
2. 1 off 2 way fault connector
3. 1 off 2 way In Use Connector
4. 1 off 2 way Access Connector

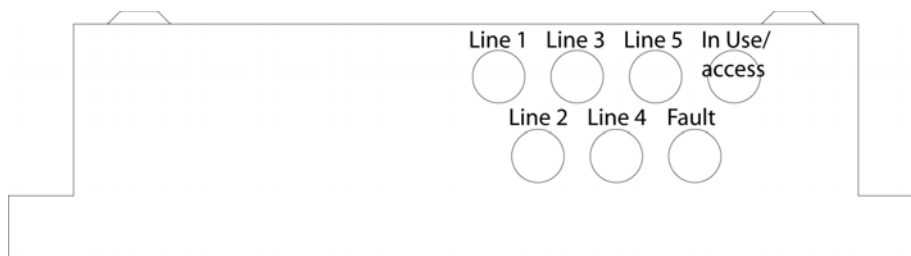
If there are any Items missing please contact your supplier or Current Thinking Ltd, quoting the unit serial number, and the name on the packing list enclosed so we can rectify the situation.

Preparation

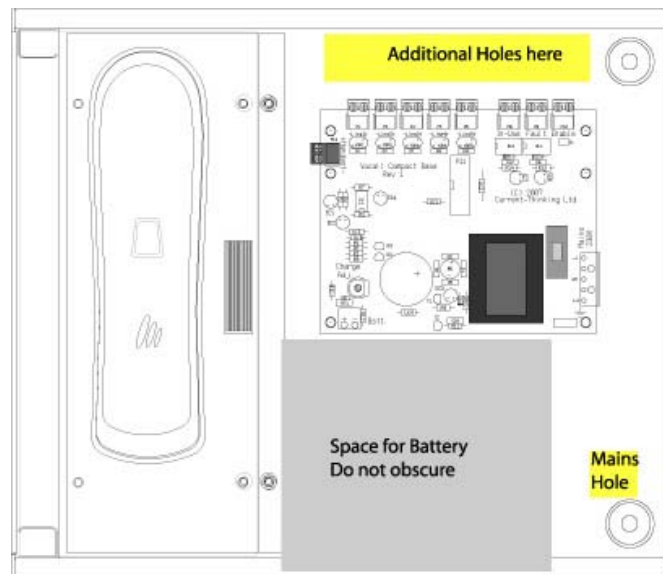
Remove the front door plate containing the circuit board by unscrewing the door hinge, this has a connection to the base PCB, which needs to be removed, Exercise static precautions to prevent damage to the electronics, store the front panel assembly safely until the master handset is mounted and cables have been attached.



Before mounting the unit on the wall it is advisable to remove the cable knockouts. Decide how the wiring will be brought into the panel and remove the required knockouts for cable entry. If a knockout is removed fill the hole with a good quality cable gland.



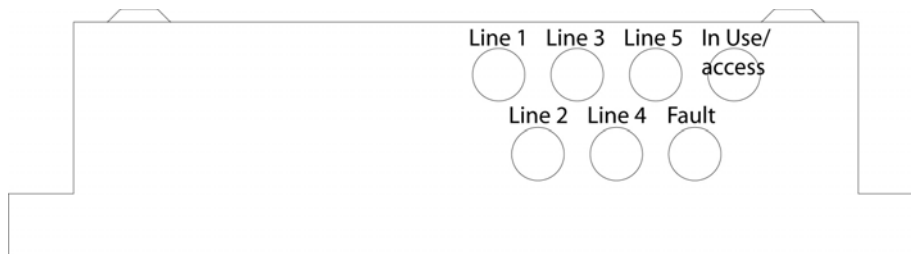
On the bottom face a single knockout is for the incoming mains, mains SHOULD NOT enter the box by any other hole. If additional holes are required, then the can be drilled as shown below, taking care not to obscure the battery or PCB locations.



Unused knockouts must be left unopened to comply with the LVD, accidentally knocked out holes should be blanked off. This work must be carried out prior to the re-installation of circuit boards.

Mounting VoCALL Compact

Before mounting the Master Unit on the wall it is advisable to remove the cable knockouts. Decide the best cable routes from the drawing below:



The Master handset weighs 6Kgs with batteries, so care should be taken to securely mount the unit on stud walling.

Connecting VoCALL Compact

To comply with EMC (Electro Magnetic Compatibility) regulations and to reduce the risk of electrical interference in the system wiring, we recommend the use of fire-resistant screened cables throughout the installation.

All wiring should come into the enclosure via the knockouts provided and be fixed tidily to the relevant terminals.

Note that correct cable glanding is essential and due regard should be paid to any system specifications which demand a certain cable type (providing it meets the appropriate national wiring regulations).

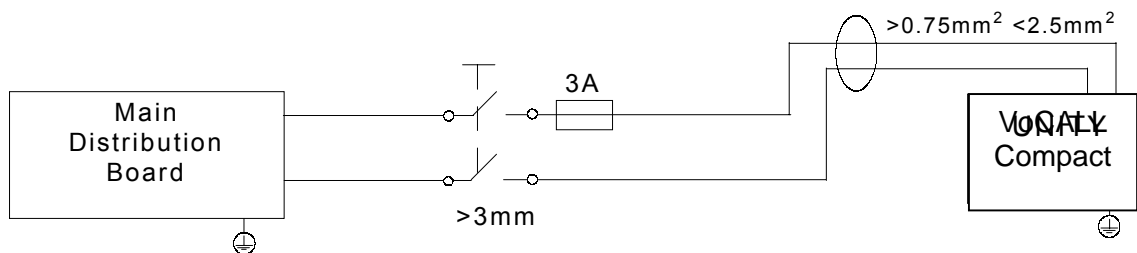
PLANNING THE WIRING

All System wiring should be installed to meet the appropriate parts of BS5839-9 (2003) and BS 7671 (Wiring Regulations). Other national standards of installation should be adhered to where applicable.

Do not test wiring with an insulation tester (Megger) with any equipment or speakers connected, as the 500 Volt test voltage will destroy these devices totally.

You must observe local wiring regulations. Do not run SELV and LV cables in the same enclosure without adequate insulation between them.

Mains Connection




Each VoCALL Compact requires a 3A spur, returning to a breaker clearly marked “**EVCS DO NOT TURN OFF**”. If the units are distributed around a site it is essential all units are on the same mains phase, as they are classified TEN 230V, powering from different phases can mean a 440V potential can be present in a unit during a major fault incident.

Batteries

The VoCALL Compact requires one number 12V 3.2AH sealed lead acid batteries to provide backup power in the event of mains failure as defined in BS5839pt8 for 24 hours standby and 30 minutes operation.

For 72hour standby and 1 hour operation one number 12V 17AH battery is required, these will need to be fitted in an external battery enclosure, the monitored charger in the VoCALL Compact is capable of charging and monitoring these batteries.

	<p>Safety Information:</p> <p>Sealed Lead acid batteries contain sulphuric acid which can cause burns if exposed to the skin, the low internal resistance of these batteries means large currents will flow if they are accidentally short circuited, causing burns and a risk of fire- exercise caution when handling batteries.</p> <p>Power Up Procedure:</p> <p>Always apply mains power before connecting batteries, do not commission VoCALL Compact on batteries, as the high inrush current required by the power supply may rupture the battery fuse. Always connect the Positive (Red +) terminal first.</p> <p>Power Down Procedure</p> <p>Disconnect the batteries before removing the mains power; always remove the negative (Black – terminal) first.</p>
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Outstation Wiring:

VoCALL Compact requires no programming to determine the outstation configuration;

Three types of handset are allowed on the system, type A (fixed phone) type B (hands-free refuge points) and Jack plates.

For type A and B phones the EOL 10k resistor is simply removed when the outstation is connected, for Jack points the EOL resistor is moved to the OUT of the last Jack on the system.

Cable Type:

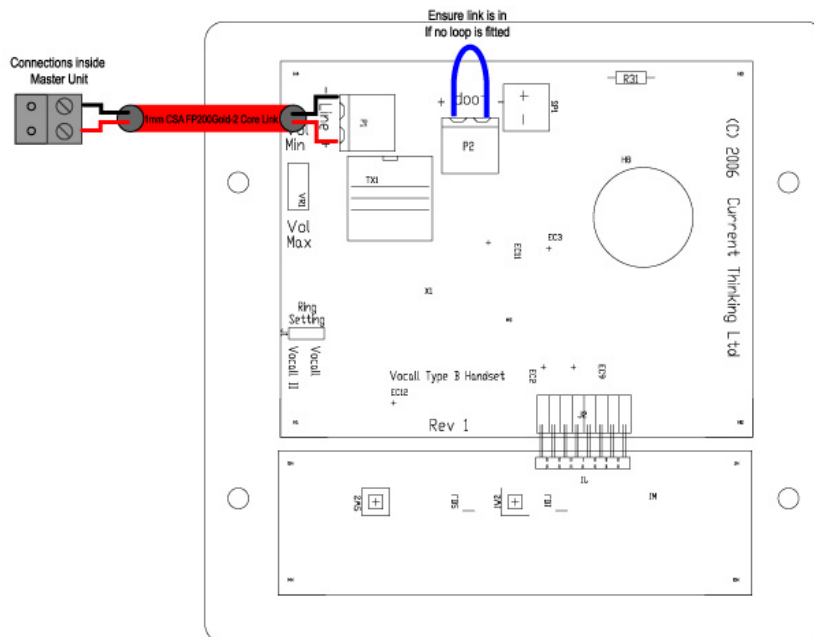
All cables on the VoCALL compact system should be Enhanced in order to comply with BS5839:pt9:2003, The unit will work with MICC to 200m per line and Soft Skin cables to 500m per line.

Handsets(type A):



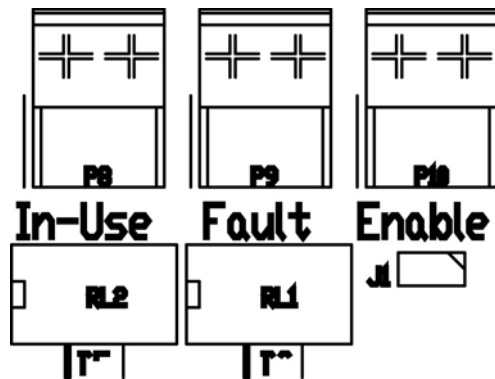
Line + connector on exchange to Red Phone lead
 Line - connection on exchange to Green Phone Lead

Hands Free Refuge Point (type B):



Auxiliary Connections

The compact has three auxiliary connections as shown below:



In Use is a normally open volt free relay (30V DC 1A) connection which closes when any outstation is operated

Fault is a normally closed volt free relay (30V DC 1A) which OPENS on any fault, including loss of power.

Enable is a normally CLOSED input and is required to operate the system (if Jumper J1 is in place then no connection is required at the terminals).

2ND Fix

Replace the front panel door plate by attaching the ribbon cable lead and fixing with the door Hinges.

Attach all plugs ensuring they fit squarely into the connectors.

Do not connect battery until the Master has been powered up on mains.

Powering UP

Carefully check the outstation wiring then apply AC power to each VoCALL Compact master unit- DO NOT commission on batteries as the power supply has a large reservoir capacitor which may rupture the battery fuse if the AC is not present when powering up the system. Once the system is powered, the battery leads can be attached to the battery.

Operation

All conversations on the VoCALL Compact system are under the command of the control handset,

Pt9 envisages the majority of calls to be made by lifting the handset of an outstation (type A) or pressing the call button (type B).

Receiving a Call:

Lift the receiver; press the Zone key where the green LED is flashing. When connected the green LED will go steady and the outstation will be connected to the handset.

To end Hang-up receiver or press the Zone key again to place the outstation on HOLD (the zone led will flash slowly when held).

Making a Call:

Lift the receiver; press the Zone key for the required outstation, the green LED on the zone key will flash. When the outstation answers the call the green zone LED will go steady and the handset will connect to the called outstation.

To end the call, Hang-up receiver or press the Zone key again to place the outstation on HOLD (the zone led will flash slowly when held).

Conference Call:

Up-to five calls can be conference called, by answering the calls or dialling the calls as described above the master handset must be involved in the call and only one conference group is allowed.

Accepting Faults:

Note the fault in the log book, then Press the Mute Buzzer key this will silence the “waterfall” tone, while the fault exists the fault buzzer will “beep” once every 15 seconds until the fault is rectified. The buzzer will resound on each new fault.

Panel Test:

Press and hold the Mute Buzzer key for 5 seconds, the fault Buzzer will sound and all status LEDs will Light.

Indications and Controls



Health Indicators (Green)

Healthy	The system is ready for use and fault free.
AC	Indicates healthy AC mains available.
DC	Indicates the battery supply is available.

Fault Indicators (Yellow)

Zone Fault	(! Led on each zone Key) steady indicated short circuit, flashing indicated open circuit.
General Fault	(on the mute buzzer Key) A fault exists on the system.
CPU Fault	The processor, main phone or watchdog timer have tripped, engineer assistance is required.
Supply Fault	Either the AC supply or DC supply is unavailable, or a fuse has ruptured.

Maintenance.

It is a requirement of BS5839pt9 that a maintenance agreement be in place for the EVCS, the maintenance schedule should be as follows.

Weekly:	Lift a different handset on the system each week and make a call to the control, repeat each week until all points are tested, record results in the site log.
Monthly:	Test one handset on each exchange by lifting the handset, followed by the master calling the line, record results in the site log.
Quarterly:	Engineer Call to check system operation.
Yearly:	Engineer Call to check system operation and check Battery Health.
5 Yearly:	Engineer Call to check system operation and replace the batteries.

Technical Specification

POWER SUPPLY AND CHARGER

AC input	230VAC +/- 10% 50/60Hz
Internal power supply	14VDC
Supply & battery monitored Protection	Open, Short, Fuses Deep discharge, Short, Thermal
Temperature compensation	YES
Battery size and type	1 x 12V 4.2Ahr
Mains fuse	240V 2A HRC
Battery fuse	1A PTC
Max Charge current	250mA

Inputs

Number of lines	5
Remote enable	Short to use
End of line	10KW

Outputs

Number	2, Fault & In use
Type	Volt free relay
Contact	30V DC 1A

Controls

Buttons	6, five lines 1 fault ack
Zone LEDs	5 status, 5 Fault status
Fault LEDs	3, AC, DC General

Outstation Cables

Type	Enhanced
Cores	2 core 1mm or 1.5mm
Distance	500m

Dimensions

Height	300mm
Width	350mm
Depth	120mm
Weight	6.5Kg

The VoCALL Compact is designed and manufactured in the UK by:

**Current Thinking Ltd,
Unit 91 Silver Briar
Enterprise Park East,
Sunderland,
SR5 2TQ.**

www.current-thinking.com
info@current-thinking.com



**WEEE
Compliant
Product**

