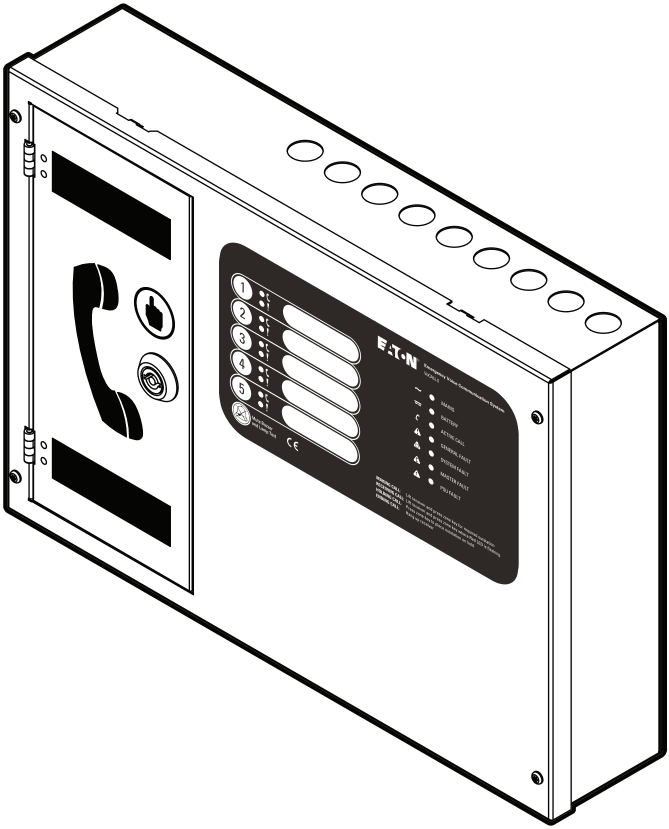
# VoCALL 5
# Line Exchange Unit

## Installation and Operation Manual




EATON

*Powering Business Worldwide*

# Contents

**Important Safety Information**

Personnel who install, maintain or repair this equipment must read the safety information below before starting work.

**Definitions and Symbols**

## WARNING

**Indicates a potentially hazardous situation which, if not avoided, can result in serious injury or death.**

## CAUTION

**Indicates a potentially hazardous situation which, if not avoided, can result in minor to moderate injury, or serious damage to the product.**

**General Safety Precautions**

## NOTICE

**The operating system of the control panel may be revised as a result of enhancements to the system software or hardware. Revisions to this manual will be issued and supplied on request and should be logged in the table supplied on the contents page.**

## WARNING

**This unit must be earthed**

## WARNING

**Each compact unit requires a 3A fused spur, returning to a breaker clearly marked EVCS DO NOT TURN OFF.**

## CAUTION

**DO NOT power up the unit 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**

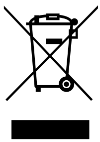
**Make sure that electro-static handling precautions are taken immediately before handling PCBs and other static sensitive components.**

**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.**

**No user serviceable parts.**

**This product must only be disposed of in accordance with the WEEE directive.**



## DOCUMENT UPDATE NOTES

| S.No. | Release / Change Notes | Date |
|---|---|---|
| C | Revision 3 | May 2019 |

# 1. Introduction

The VoCALL 5 Emergency Voice Communications System (EVCS) is a fixed, secure, bi-directional 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, disabled refuge systems and Emergency Assistance Alarms.

VoCALL 5 is designed to fully comply with BS5839-Part 9 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.

## 1.1 Suitability

Emergency voice communication systems are recommended for all public buildings and multi story buildings by local codes of practice such as BS9999.

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

## 1.2 Product Overview

A VoCALL 5 line exchange unit comprises of 2 functional blocks, the VoCALL 5 line exchange unit and the outstations, (Type A, Type B, Jack Points and Emergency Assist Alarm), with the quantities of these basic units being adjusted to suit the application.

VoCALL 5 has been designed on a star topology consisting of spurs formed from 1-- off two core 1mm CSA cables (soft skin enhanced up to 500m per leg, MICC 200m per leg) to each outstation. Please follow local codes of practice for cable types and wiring routes.

## 1.3 Retrofit compatibility

If you are replacing an existing EVCS system with this unit then a test for compatibility must be carried out on the outstations, and any units which do not function as expected must be replaced with new units. This advice also applies to all roaming handsets.

# 2. Unpacking the Unit

Remove the VoCALL 5 EVCS unit from its packing, and check the contents against the following:

1. VoCALL 5 EVCS unit
2. Quick Start Guide
3. Accessory pack with the following contents:-
    a. Spare mains fuse
    b. 5x 3K9 0.6W end of line resistors (fitted to line sockets)

Verify the following items are present:

1. 5x Outstation Line Connectors
2. 1x 2 Way Fault Connector
3. 1x 2 Way In Use Connector
4. 1x 2 Way Access Connector

If there are any items missing please contact your supplier or EATON Life Safety Products.

# 3. Removing the Cover

Using a Phillips head screwdriver, open the front cover by removing the 2 screws along the bottom edge of the panel. Then lift the cover from the bottom edge and push up in order to disengage the latching clips on the top edge.

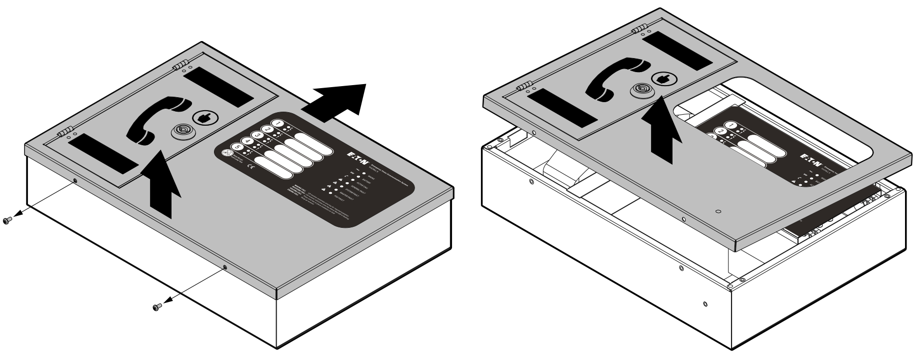


**Figure 1. Removing the front cover**

# 4. Mounting VoCALL 5

Before mounting the VoCALL 5 on the wall it is advisable to remove the cable knockouts.

Unused knockouts must be left unopened to comply with the Low Voltage Directive (LVD), accidentally knocked out holes should be blanked off.

## 4.1 Surface Mount (EFVCC5)

When mounting the surface mount version to the wall ensure the unit sits flat on the wall and is secured via the keyed embossed sections in the rear of the back box. Ensure the unit is secure to wall with sufficient fixings to hold the unit and its batteries.

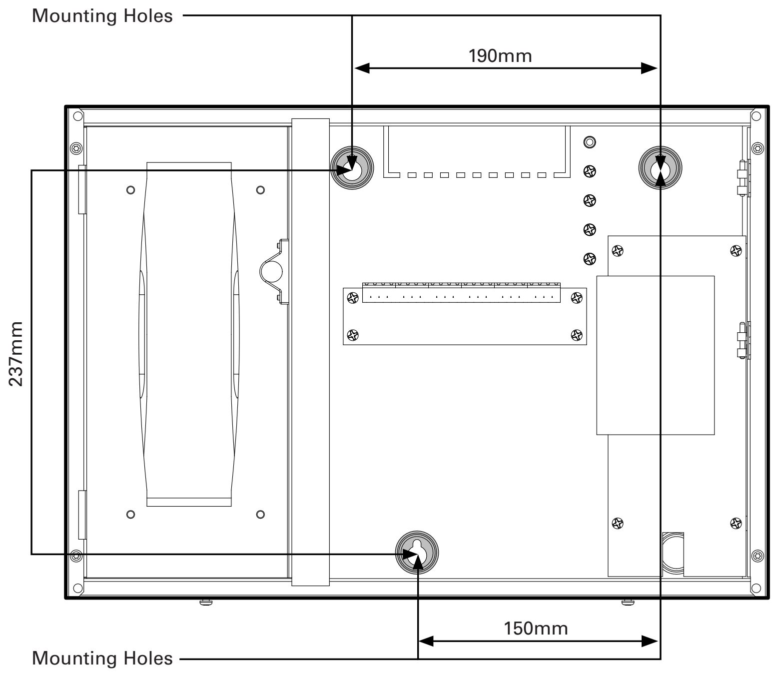



**Figure 2. Surface mounting VoCALL 5**

## 4.2 Stainless Steel Flush Mount (EFVCC5-FC)

If the VoCALL 5 is to be fitted with the Stainless Steel Flush Mount option (EFVCC5-FC), the dimensions of the hole cut into the wall must only exceed the dimensions of the panel by a maximum of 20mm on all sides.

The flush cover provides a 25mm border around the outside dimensions of the panels.

For correct fitting of the flush mount cover, the VoCALL 5 back box should be recessed into the wall so that the front of the unit is level with the finished surface of the wall. The flush plate will then sit flat on the wall and the front of the unit once the 4 countersunk screws are fitted.

Be aware that the flush plate is heavier than the standard cover, and therefore special care should be taken to ensure the fixings are adequate to support the panel.

For full dimensions see "10. Technical Specification" on page 18.

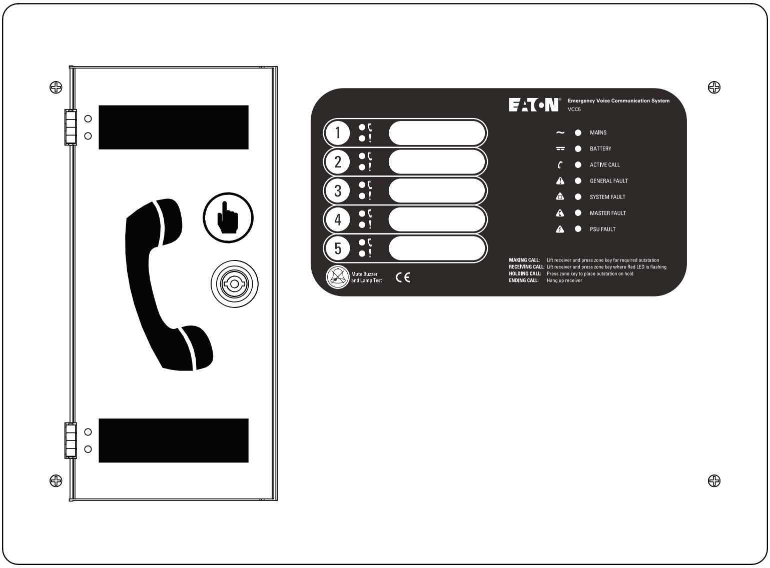



**Figure 3. Mounting the Flush Mounted panel. EFVCC5-FC should be procured separately.**

## 4.3 Semi-Flush Bezel (EFVCC5-FB)

If the VoCALL 5 is to be fitted with the semi-flush bezel option (EFVCC5-FB), the dimensions of the hole cut into the wall must only exceed the dimensions of the panel by a maximum of 20mm on all sides.

The flush cover provides a 25mm border around the outside dimensions of the panels.

For correct fitting of the semi-flush bezel, the VoCALL 5 back box should be recessed into the wall so that the rear edges of the front plate line up with the finished surface of the wall. The semi flush bezel will then sit flat on the wall once fitted.

Be aware that the semi-flush bezel adds a small amount of weight, and therefore special care should be taken to ensure the fixings are adequate to support the panel.

For full dimensions see "10. Technical Specification" on page 18.

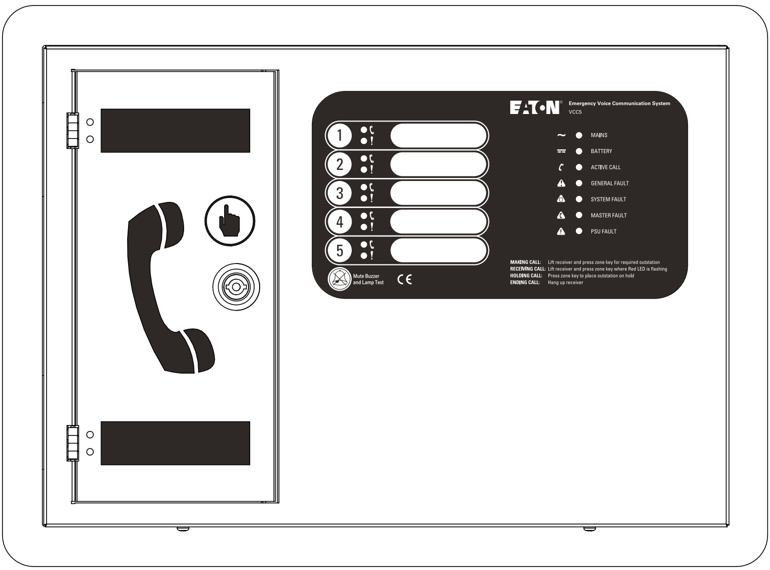



**Figure 4. VoCALL 5 with EFVCC5-FB fitted. EFVCC5-FB should be procured separately.**

# 5. Connecting VoCALL 5

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).

## 5.1 Planning the Wiring

All system wiring should be installed to meet the appropriate parts of relevant local regulations such as BS5839-9. Other national standards of installation should be adhered to where applicable. Do not test wiring with an insulation tester (Megger) with any equipment connected, as the high voltage test 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.

## 5.2 Mains Connection

Each VoCALL 5 requires a 3A fused spur, returning to a breaker clearly marked “EVCS DO NOT TURN OFF”.

## 5.3 VoCALL 5 Wiring

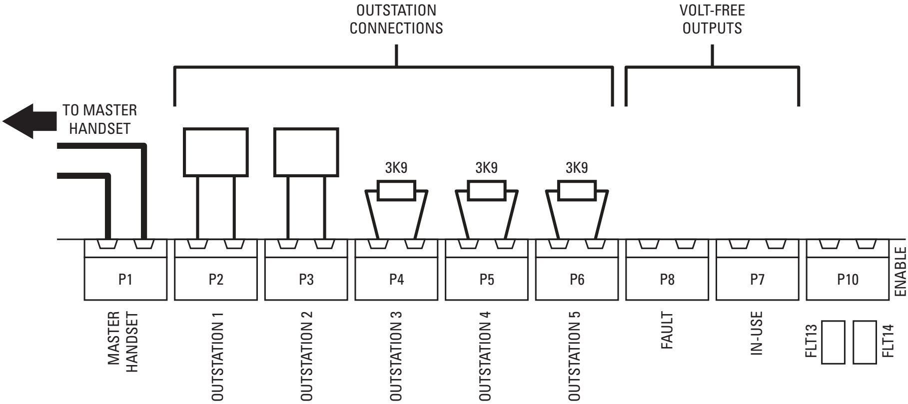



**Figure 5. VoCALL 5 Wiring**

## 5.4 Outstation Wiring

The VoCALL 5 system requires no programming to determine the outstation configuration.

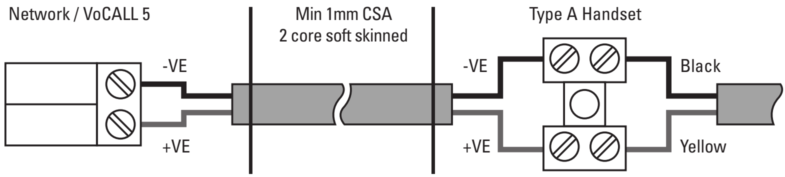
4 types of outstation are allowed on the system, type A (fixed phone) type B (hands-free refuge points), jack plates and emergency assist alarm.

For type A telephones, type B refuge points and emergency assist alarm the 3K9 resistor is simply removed from the terminal blocks when the outstation is connected, for jack points the EOL resistor is moved to the OUT of the last jack on the system.

## 5.5 Cable Type

All cables on the VoCALL 5 system should be of a type required to comply with local regulations. The unit will work with MICC to 200m per line and enhanced Soft Skin cables to 500m per line.

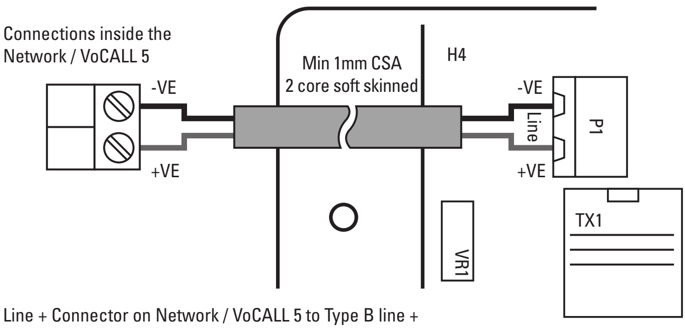
## 5.6 Outstation Wiring (Type A)




Line + Connector on Network / VoCALL 5 to Yellow phone lead
Line - Connector on Network / VoCALL 5 to Black phone lead

**Figure 6. Type A Outstation Connection**

## 5.7 Outstation Wiring (Type B)




Line + Connector on Network / VoCALL 5 to Type B line +
Line - Connector on Network / VoCALL 5 to Type B line -

**Figure 7. Type B Outstation Connection**

# 6. Auxiliary Connections

The compact system has three auxiliary connections as shown below:

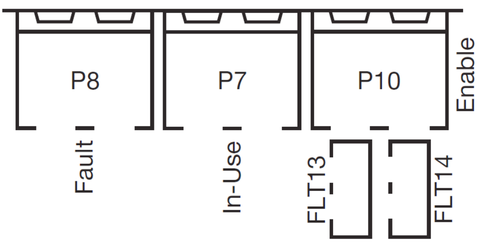



**Figure 8. Auxiliary Connection**

## 6.1 Remote Disarming/Arming - FAULT/IN-USE

**P7 “IN USE”** = Normally open volt free contact (30VDC 1A) - Closes when any connected outstation is operated.

**P8 “FAULT”** = Normally closed volt free contact - 30VDC 1A) - Opens on any fault, including loss of power.

**P10 “Enable”** = When a jumper is removed, the system is disabled until enabled by a short across terminals at P10. This function allows for disarming/arming of the system by a remote means i.e. key switch or relay controlled by 3rd party systems such as a fire alarm system. It is a useful feature when the VoCALL 5 is located in a public area and unwanted use needs to be controlled.

**Note:** Care should be taken during commissioning to ensure a jumper is fitted during standard applications.

## 6.2 Powering Up

Carefully check the outstation wiring then apply AC power to the VoCALL 5 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.

# 7. Batteries

The VoCALL 5 requires 2 x 5Ah sealed lead acid batteries to provide backup power in the event of mains failure. Check with local codes of practice for the duration and type of backup required.

For longer standby or operation times larger batteries will be required, these will need to be fitted in an external battery enclosure, the monitored charger in the VoCALL 5 is capable of charging and monitoring up to 2x12V 12Ah batteries.

**Note:** The VoCALL 5 is supplied without batteries which should be procured separately and be of adequate capacity to meet local regulations.

# 7. Batteries

## 7.1 Battery fitting

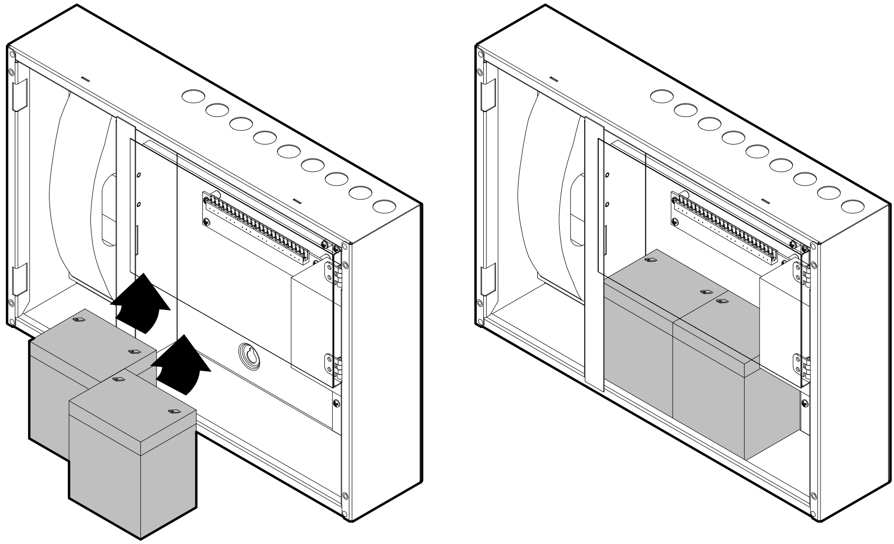


**Figure 9. Inserting the batteries (not included)**

## 7.2 Battery wiring

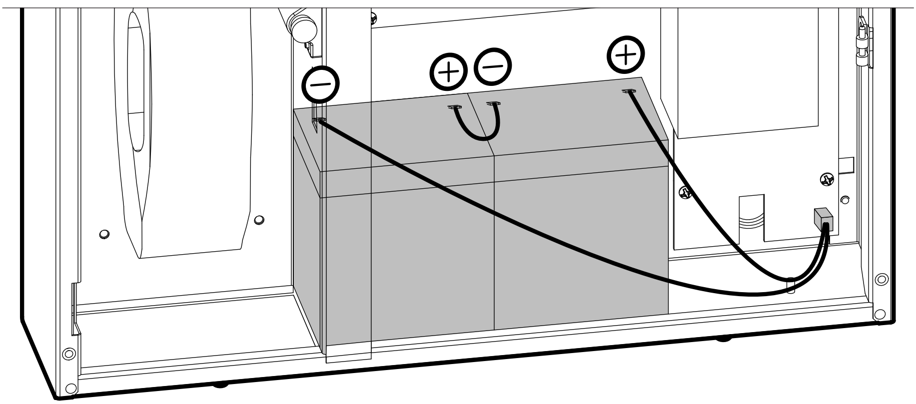


**Figure 10. Wiring the batteries (not included)**

## 7.3 Safety Information:

**CAUTION**

**BATTERIES**

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.

**Power Up Procedure**

Always apply mains power before connecting batteries, do not commission VoCALL 5 on batteries, as the high inrush current required by the power supply may rupture the battery fuse.

Always connect the Positive (Red +) terminal first.

**Power Down Procedure**

Disconnect the batteries before removing the mains power; always remove the negative (Black – terminal) first.

# 8. Operation

All conversations on the VoCALL 5 system are under the command of the control handset.

## 8.1 Receiving a call at the main panel

Lift the receiver; press the zone key where the Red LED is flashing. When connected the Red 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).

## 8.2 Making a call from the main panel

Lift the receiver; press the zone key for the required outstation, the Red LED on the zone key will flash. When the outstation answers the call the Red 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).

## 8.3 Accepting Faults

Note the fault in the log book (available to download on line), 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.

## 8.4 Panel Test

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

## 8.5 Indications and Controls

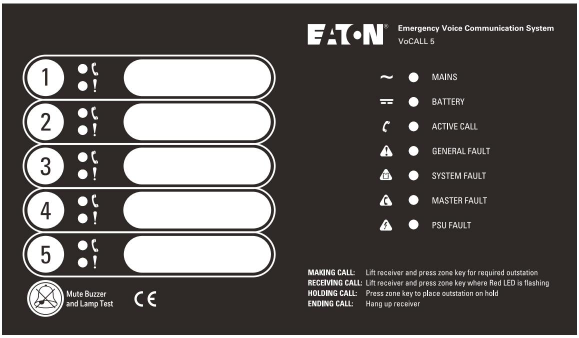



**Figure 11. Indication and Controls**

| | |
|---|---|
| **Indicators (Green)** | |
| Mains | Indicates healthy mains |
| Battery | Indicates healthy battery and charger healthy |
| **Indicators (Yellow)** | |
| General Fault | A fault exists on the system |
| System Fault | Main panel fault, engineer assistance is required |
| Master Fault | Master handset fault |
| PSU Fault | Either the AC supply or DC supply is unavailable, or a fuse has ruptured |
| Exclamation Mark Symbol | Outstation zone fault |
| **Indicators (Red)** | |
| Active Call | Call in progress |
| Zone Handset Symbol: | |
| - Master Calling Zone | Quick Flash |
| - Zone Calling Master | Quick Flash |
| - During Call | Solid |
| - Holding Call | Slow Flash |

# 9. 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:** | **By the responsible person or their agent**, 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. |
| **6 Monthly:** | Engineer Call to check system operation and check battery health. |
| **5 Yearly:** | Engineer Call to check system operation and replace the batteries. |

Different maintenance schedules may be required in different countries, please check your local standards.

# 10. Technical Specification

| | |
|---|---|
| **Power Supply and Charger** | |
| AC Input | 230V AC +10%/-15%, 50Hz |
| Internal Power Supply | 28V DC |
| Supply & Battery | Monitored Open, Short, Fuses |
| Protection | Deep Discharge, Short, Thermal |
| Temperature Compensation | YES |
| Battery Size and Type | 2 x 12V VRSLA 5Ah (Check local regulations) (not supplied) |
| Mains Fuse | 1.6A 250V anti surge |
| Battery Fuse | 6.3A 250V anti surge |
| Max Charge Current | 1A |
| **Inputs** | |
| Number of Lines | 5 |
| Remote Enable | Short to use |
| End of Line | 3K9 |
| **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 | Please refer to local codes of practice |
| Cores | 2 core 1mm or 1.5mm |
| Distance | 500m max, with soft skinned cable |
| **Dimensions (H x W x D)** | |
| EFVCC5 | 303mm x 433mm x 89mm |
| EFVCC5-FC | 353mm x 483mm x 2.5mm |
| EFVCC5-FB | 359mm x 490mm x 0.9mm |
| **Weight** | |
| EFVCC5 | 5.45kg (without batteries) |
| EFVCC5 with EFVCC5-FC fitted | 7.63kg (without batteries) |
| EFVCC5 with EFVCC5-FB fitted | 6.05kg (without batteries) |

## Notes

**Eaton Electrical Systems Ltd.**
Wheatley Hall Road
Doncaster
South Yorkshire
DN2 4NB

**Eaton**
EMEA Headquarters
Route de la Longeraie 7
1110 Morges, Switzerland
Eaton.eu

Powering Business Worldwide


Publication No. 25-13400-C
May 2019