

CRISIS
EVC Master Station
User Guide



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Scope

The Crisis EVC Master Station Installation Guide provides a comprehensive description of the Crisis Emergency Voice Communication System.

This guide introduces the Crisis EVC Master Station features, technical specifications and gives an understanding of its components and their function. You will also find instructions testing.



This guide is for anyone involved with the maintenance and purchasing of a Crisis EVC system. It is assumed that anyone using this product has the knowledge and appropriate certification from local fire and electrical authorities.

Document Conventions

The following typographic conventions are used in this document:

| Convention | Description |
|----------------|---|
| Bold | Used to denote: Emphasis. |
| <i>Italics</i> | Used to denote: References to other parts of this document or other documents. |

The following icons are used in this document:

| Convention | Description |
|---|--|
|  | Recommended guideline: Advising to do so. |
|  | Caution: Not appropriate to do so or; care taken to avoid danger or mistakes. |

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1 Introduction

1.1 What is an Emergency Voice Communication System?

An Emergency Voice Communication System, or EVCS, is a system that allows voice communication in either direction between a central control point and a number of other points throughout a building or building complex, particularly in a fire emergency situation. The control points, or outstations by which they are more commonly referred, generally comprise of a Type A outstation, a Type B outstation, or a Type C Combined Type outstation. "Assist Call" emergency assistance alarm systems can also be incorporated into the EVCS.

EVCS is generally required in the following situations:

- In any building or sports or similar venue where there are disabled people, or people who may have difficulty negotiating the evacuation route.
- In buildings with phased evacuation and/or fire fighting lifts where it facilitates secure communications for building managers, fire wardens, and attending fire officers.
- At sports venues and similar complexes, where it will assist stewards in controlling the evacuation of the area in an emergency.

The Crisis Emergency Voice Communications System (EVCS) is designed to fully comply with BS5839 Part 9:2011 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.

1.2 Suitability

Fire telephone systems are recommended for all public buildings and multi-story buildings over four floors by BS9999.

Disabled Refuge systems are required in buildings where the public or disabled staff gains access to any floor other than the ground floor using lifts. Refuge areas are provided at each storey exit from each protected stairway.

2 Product Overview

Crisis EVCS, comprises of a Master Station and one or more outstations. Additionally the "Assist Call" emergency assistance alarm system can either be connected to the same line as a Type B outstation, or connected to a dedicated line. Neither the outstations nor the "Assist Call" emergency alarm system require a separate power supply unit as each line is powered from the Master Station. This has the additional benefit of each line being fully monitored and battery backed up.

Each Crisis Master Station can also perform as a Repeater Station. A Crisis Repeater Station mimics the EVC Master Station both in operation and indication. Any reference in this document to the Crisis EVC Master Station also applies to the Crisis Repeater Station, unless specified otherwise.

The Master Station has been designed for radial star topology. In most cases this will reduce the cable requirements for all ring-based systems. The topology consists of spurs formed of 1 off two core 1.5mm CSA cables (soft skin enhanced up to 500m per leg, MICC 200m per leg) to each outstation.

3 Important Safety Information

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

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



| | |
|--|--|
| | <p>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 SERVICEABLE PARTS</p> |
|--|--|

Each Crisis EVC Master/Repeater Station requires a 3A spur, returning to a breaker clearly marked "**EVCS DO NOT TURN OFF**".

If the Crisis Master Station and the Crisis Repeater Station are distributed around a site, it is essential that both Crisis Stations 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 Crisis EVC Station during a major fault incident.



Anti-static handling guidelines

Make sure that electrostatic 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. Always handle PCBs by their sides and avoid touching any components.

3.1 Battery Information

In the event of mains failure BS5839 Part 9:2011 requires battery backup for 24 hours standby and 3 hours operation thereafter.

A Crisis EVC Master/Repeater Station requires one number 12V 7AH vent regulated sealed lead acid battery. The battery is not supplied with the Master/Repeater Station.

| | |
|--|---|
| | <p>Safety Information: Sealed Lead Acid batteries contain sulphuric acid which can cause burns if exposed to the skin. The low internal resistance of these batteries mean 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: Always apply mains power before connecting batteries. When connecting batteries, always connect the Positive (Red +) terminal first.</p> <p>Power Down Procedure Disconnect the batteries before removing the mains power. When disconnecting batteries, always remove the Negative (Black –) terminal first.</p> |
|--|---|

4 Operation

All conversations are under the command of the Crisis EVC Master Station.

4.1 Receiving a Call

1. One of the eight zone LEDs and the mode LED will flash red to indicate an incoming call. The flash rate will identify the outstation type, with a Type A outstation having a faster flash rate than a Type B outstation.
2. Lift the Master handset receiver. The User LED will illuminate Red.
3. Press the corresponding zone button (indicated by the red flashing LED). This LED and the User LED will change to flashing green to show that this line is now connected, and a conversation can take place.

4.2 Making a Call

1. To make a call, lift the Master handset receiver and the User LED will illuminate red.
2. Press the zone button for the required outstation. The corresponding zone LED will flash red. This flash rate will be slower than the flash rate for either an incoming Type A or Type B call.
3. When the outstation answers the call, the zone LED flashes green, the mode LED illuminates red and the user flashes green to indicate this line is now connected and a conversation can take place.

4.3 Ending a Call

- To end the call from the outstation, either replace the Type A receiver back on its hook or press the call/cancel button for a Type B outstation.
- To end a conversation from the Crisis EVC Master Station, replace the Master handset receiver back on its hook.

| | |
|--|--|
| | <p>This will not end the call, only the conversation. The outstation will revert back to requesting a call, and the zone LED will flash red to indicate this. The call MUST be ended at the outstation.</p> |
|--|--|

4.4 Putting a Call on Hold

1. To put a call on hold, press the zone button for the required outstation that is already connected. The zone LED will change from flashing green to flashing green/red. The hold tone will be heard in the handset.
2. To reconnect the call, press the zone button for the required outstation again. The zone LED will change from flashing green/red to flashing green to indicate the call is now connected again.

4.5 Conference Call

Depending upon the number of Line Cards fitted in the Master Station, up to five lines can be connected to the conference call at any one time. To receive a call, see 4.1. To make a call to an individual outstation, see 4.2. The Master Station controls which lines are involved in the conference, and only one conference group is allowed.

4.6 Acknowledging “Assist Call” Alarms

1. When an “Assist Call” goes into alarm, the appropriate zone LED will flash blue, and a two-tone buzzer sounds to indicate that an “Assist Call” alarm has been operated.
2. To acknowledge the alarm, press the corresponding zone button, and the blue LED will illuminate continuously with an intermittent buzzer tone every 15 seconds. If after 2 minutes the “Assist Call” alarm has not been cancelled, the buzzer will resound and the LED will flash blue.
3. Within the WC cubicle the pull cord indicator will change from continuous indication to no indication. The cancel plate will alter from flashing to continuous and the buzzer will change from continuous to intermittent. Outside the cubicle the Over door plate indication will alter from flashing to continuous and the buzzer will change from continuous to intermittent. This change in indication and buzzers during the acknowledge phase indicates to the WC user that help is on the way.

4.7 Accepting Faults

1. Before accepting faults, the fault must be noted in the log book, along with the time the fault was reported.
2. To accept the fault, enter either the access level 2 (code: 1664) or access level 3 (code: 1812) menu, then press zone button 1. The buzzer will silence and the general fault LED will now go steady.
3. Press zone button 8 to exit this menu and to return to the menu options.
4. The buzzer will resound on each new fault.

4.8 Panel Indicator Test

1. To test the panel indicators, enter either the access level 2 (code: 1664) or access level 3 (code: 1812) menu, then press zone button 2.
2. All LEDs will illuminate in a predefined sequence, and the buzzer will sound.
3. Press zone button 8 to stop the panel indicator test and to return to the menu options.

5 Indications and Controls



Figure 1: Crisis EVC Master Station Indication and Control

5.1 Mode Indicator Summary

| Mode | Description |
|-----------------|---------------------------------|
| Green Solid | Normal state |
| Red Solid | Outstation off hook |
| Blue Solid | Assist call active |
| Yellow Solid | Refuge (type B) points disabled |
| Flashing Yellow | Fault on panel |

Table 1: Indicator Summary

5.2 Power Supply & CPU indicator Summary

| AC | DC | PSU | General | CPU | Description |
|-------|-------|-------|---------|-----|---|
| ON | | | | | Mains OK |
| OFF | | FLASH | FLASH | | Mains failure |
| ON | ON | | | | Battery OK |
| ON | OFF | FLASH | FLASH | | Battery open circuit |
| ON | OFF | ON | FLASH | | Battery short circuit |
| ON | FLASH | ON | FLASH | | Battery high impedance |
| ON | | ON | FLASH | ON | PSU processor fail |
| ON | | | FLASH | ON | Display or Exchange Processor Fault or Display-Exchange comms fault |
| ON | | | FLASH | | Display or Exchange Processor Fault or Display-Exchange comms fault on remote panel (if applicable) |
| ON | FLASH | | FLASH | | Remote Battery fault |
| FLASH | | | FLASH | | Remote Mains fault |

Table 2: Power Supply & CPU Indicator Summary

ON = LED illuminated
OFF = LED off
FLASHING = LED Flashing



When faults are accepted the general LED illuminates solid.

5.3 User Indicator Summary

| | |
|--------------------|---|
| Red | Master handset off hook |
| Flashing Yellow | Master handset open circuit |
| Cyan | User logged in |
| Magenta | Engineer logged in |
| Flashing Green | Call connected |
| Flashing Red/Green | Call on hold |
| Solid Yellow | Master handset short circuit |
| Solid White | Call connected on remote master station |

Table 3: User Indicator Summary

5.4 Zone Indicator Summary

| Zone Indicator Status | User Indicator Status | Buzzer Status | Description |
|-----------------------------|---------------------------|--------------------------|---|
| Slow Flashing Red | | OFF | Outgoing call |
| Fast Flashing Red | | Ringing | Incoming call from type A outstation |
| Normal Flashing Red | | Ringing | Incoming call from type B outstation |
| Normal Flashing Green | Normal Flashing Green | OFF | Call connected to local master handset |
| Normal Flashing Green/Red | Normal flashing Green/Red | OFF | Call on hold |
| Normal Flashing Green/White | Solid White | OFF | Call connected via a remote master handset |
| Solid Yellow | | ON | Line Short circuited |
| Slow Flashing Yellow | | ON | Line card missing |
| Normal Flashing Yellow | | ON | Line Open circuit or EOL missing |
| Fast Flashing Yellow | | ON | Line Earth fault or Assist Call line cross polarity |
| Solid Cyan | Solid Cyan | OFF | Access level 2 |
| Solid Magenta | Solid Magenta | OFF | Access level 3 |
| Normal Flashing Blue | | 2 Tone Alarm | Incoming Assist Call alarm |
| Solid Blue | | Intermittent Double Beep | Assist call acknowledged |

Table 4: Zone Indicator Summary

6 Maintenance

It is a requirement of BS 5839-9:2021 that a maintenance agreement be in place for the EVCS. The maintenance schedule should be as follows:

| Frequency | Test |
|------------|--|
| Weekly | Test a different outstation on the system each week and make a call to the control. Repeat each week until all outstations and master stations are tested. Record these results in the site log. *If more than one master station is present alternate weekly. |
| Biannually | Engineer call to check system operation, intelligibility, field strength of attached AFILS equipment and check battery health. Record results and any variations into the site Log Book |
| Yearly | Engineer call to check system operation perform 100% outstation and master station operation, field strength of attached AFILS equipment and check battery health. Record results and any variations into the site Log Book |
| 5 Yearly | In addition to Yearly tests replace all batteries and record in Log Book. |

Table 5: Maintenance

7 Design, Installation and Commissioning Certificate

| | |
|-------------------------|---|
| Site Name | |
| Address | |
| Customer | |
| Customer Address | |
| Areas Covered | |
| System Design | In accordance with Section 1 of BS 5839-9:2021 Sub Clause 6 the system design is has in accordance with the recommendations of this code except for the following: |
| Installation | In accordance with Section 3 of BS 5839-9:2021, the wiring has been inspected and tested and been found to be in accordance with the recommendations of this code except for the following: |
| Commissioning | In accordance with Section 4 of BS 5839-9:2021 Sub Clause 22C 1. Intelligible conversation is heard at all locations. 2. All controls and indicators operate correctly. |
| Acceptance | The system is accepted in good working order and, in accordance with BS5839-9:2011, record drawings, operating instructions and a system log book have been supplied and received. Attention has been drawn to the recommendations concerning user's responsibilities, particularly those concerned with routine attention and test procedures in Section 5, and an appointed responsible person should be nominated by the customer in accordance with the recommendations of Section 6 of BS5839-9:2011. |
| Engineer | |
| Date | |
| Position | |
| Signature | |

8 Site Specific Information

| | |
|---------------------------|--|
| Responsible Person | |
| Date | |
| Position | |
| Signature | |

| Crisis EVC Master Station | | |
|----------------------------------|-------------|--------------------|
| Cable ID | Line | Area Served |
| | 1 | |
| | 2 | |
| | 3 | |
| | 4 | |
| | 5 | |
| | 6 | |
| | 7 | |
| | 8 | |

9 Log Book

[illegible]

[illegible]

10 Technical Specification

| Power Supply & Charger | |
|------------------------|--|
| AC Input | 230V AC \pm 10% 50/60Hz |
| Internal Power Supply | 5V, 16V, 27V DC |
| Supply and Battery | Monitored Open, Short, Fuses, High Impedance |
| Protection | Deep Discharge, Short, Thermals |
| Battery Information | 1 \times 12V 7AH VRSLA |
| Mains Fuse | 240V 1A HRC |
| Battery Fuse | 750mA PTC |
| Max Charge Current | 500mA |

Table 11: Power Supply & Charger Technical Specification

| Inputs | |
|------------------------|-----------------|
| Lines | Between 2 and 8 |
| Remote Enable | Short to Use |
| End of Line Monitoring | 10K |

Table 12: Inputs Technical Specification

| Outstation Cables | |
|-------------------|---------------------------------------|
| Type | Standard* / Enhanced |
| Cores | 1 \times 2 Core Radial 1mm or 1.5mm |
| Distance | 500m from Master Station |

Table 13: Outstation Technical Specification

| Outputs | |
|--------------|--|
| Number | 2, Fault & In Use |
| Fault Relay | 1 \times Volt Free NC, Com 30V DC 1A |
| In Use Relay | 1 \times Volt Free NO, Com 30V DC 1A |

Table 14: Outputs Technical Specification

| Controls | |
|-----------------|----------------------------------|
| Number and Type | 8 \times Push Button Zone Keys |

Table 15: Controls Technical Specification

| Indication | |
|-----------------|--|
| Number and Type | 8 \times RGB Line Indicators 3 \times PSU Status Indicators 1 \times CPU Fault Indicators 1 \times General Fault Indicator 1 \times RGB Mode Indicator 1 \times User Status Indicator |

Table 16: Indication Technical Specification

| Network Cables | |
|----------------|---|
| Type | Standard* / Enhanced |
| Cores | 2 \times 2 Core Loops, 1mm or 1.5mm (2C Data, 2C Audio) |
| Distance | 500m Max Between Panels |

Table 17: Network Cables Specification

| Standards Compliance |
|----------------------|
|----------------------|

| | |
|-----------------------|--|
| EMC | EN 55035:2017+A11:2020 EN 55032:2015+A1:2020 |
| LVD | EN IEC62368-1:2020+A11:2020 |
| Product Family | BS 5839-9:2021, BS 9999:2017, BS 8300-2:2018 |

Table 18: Standards Compliance Specification

| Dimensions | Panel | Bezel | Cut-Out |
|-------------------|--------------|--------------|----------------|
| Height | 300mm | 350mm | 305mm |
| Width | 350mm | 400mm | 355mm |
| Depth | 95mm | 1mm | 85mm |
| Weight | 4.5kg | | |

Table 19: Dimensions Specification

*Refer to BS 5839-9:2021 for exceptions.

The Crisis EVC Master Station EVCS is designed and manufactured in the UK.

