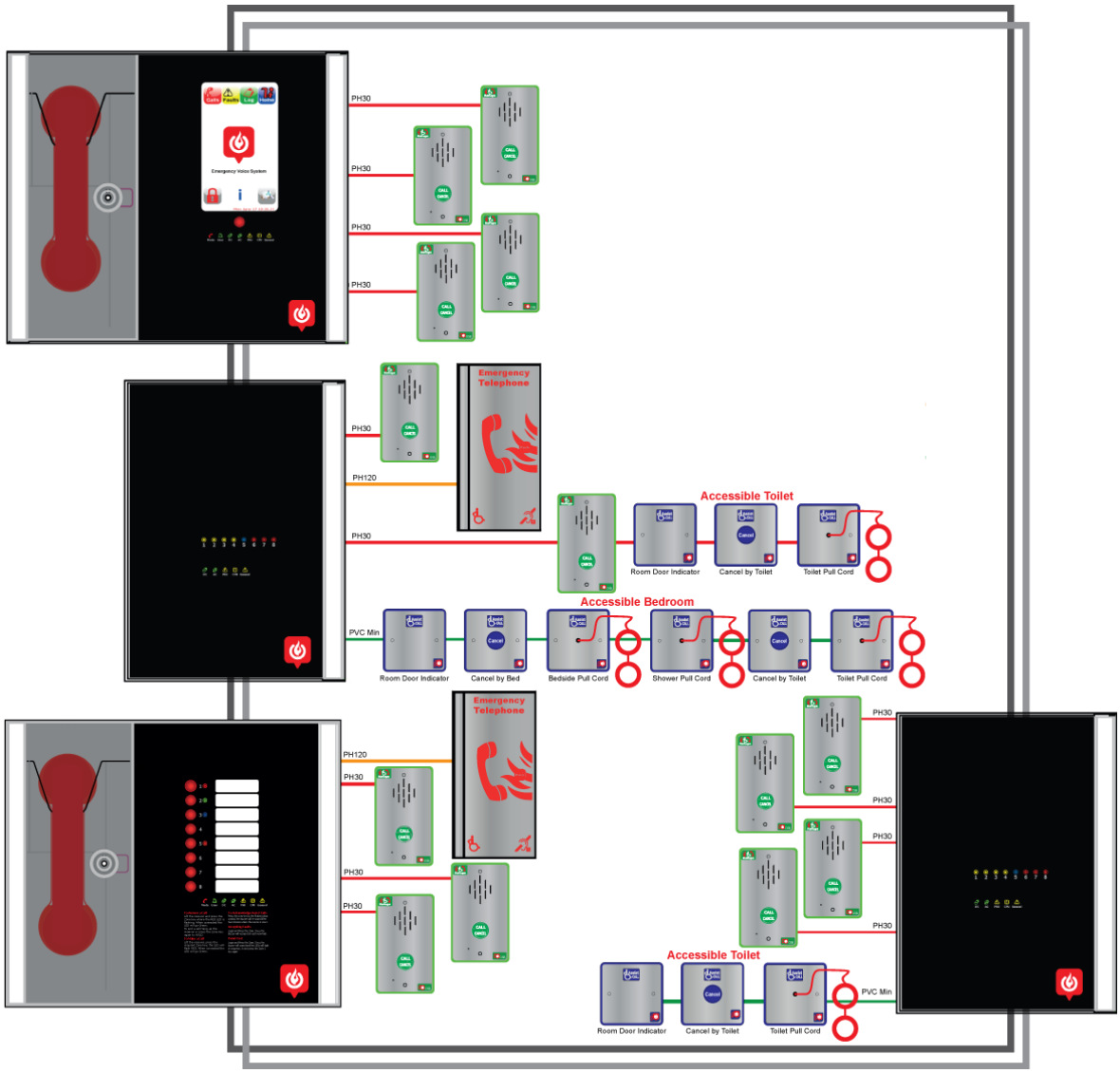
TECHNOSWITCH
FIRE DETECTION & SUPPRESSION

VS-EVS-TMS

EVCS Master Station

Rev 07.00

USER MANUAL, COMMISSIONING CERTIFICATES & LOG BOOK



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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 firefighting 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 Technoswitch VS-EVS-TMS Emergency Voice Communications System (EVCS) is designed to fully comply with BS 5839-9:2011 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 APPLICATION

Fire telephone systems are recommended for all public buildings and multi-story buildings over four floors by BS 9999.

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

The Technoswitch EVCS has been designed around a total network concept so all of the Technoswitch panels have built-in networking. The system comprises 3 types of panel; VS-EVS-TMS Touchscreen Master Station (hereafter referred to as EVS-TMS), the VS-EVS-228 2 to 8 Line Master Station (hereafter referred to as EVS-228) and a VS-EVS-EX8 system expander panel (hereafter referred to as EVS-EX8). For Technoswitch systems in excess of 8 lines an EVS-TMS must be used as the master station, the system can then be expanded by the use of an EVS-EX8 or EVS-228 in blocks of 8 lines up to a maximum system capacity of 512 lines. Additional EVS-TMS panels can be used wherever indication and control is required i.e. fire control rooms and building reception.

The wiring is a ring and spur topology with Outstations being wired on radial spurs from any master station or system expander panel. The EVS-EX8 and any EVS-TMS or EVS-228 are wired in a ring network up to a maximum of 64. The EVS-EX8 would typically be sited in convenient locations close to the Outstations i.e. risers or stairwells resulting in short vertical wiring runs. The EVS-228 can be used to provide local control of up to 8 lines within a building – this can then report back to an EVS-TMS which can provide overall control of an entire site. In this way a very large system can be completed with a minimum of cabling coming back the master station via the network ring.

Additionally the ASSIST CALL Emergency Assistance Alarm System can either be connected to the same line with an Outstation, or connected to a dedicated line. As each line is powered from the EVS-TMS or EVS-EX8, the Outstations and the ASSIST CALL Emergency Assistance Alarm System do not require a separate power supply unit. This has the additional benefit of each line being fully monitored and battery backed up.

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 EN 60065 (Low Voltage Directive) and MUST BE EARTHED.

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

Each EVS-TMS and EVS-EX8 requires a 3 A spur, returning to a breaker clearly marked "**EVCS DO NOT TURN OFF"**.

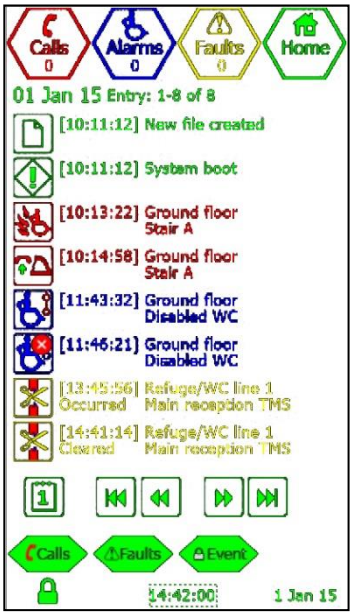
If the EVS-TMS, EVS-228 and the EVS-EX8 are distributed around a site, it is essential that all panels are on the same mains phase, as they are classified TEN 230 V. Powering from different phases can mean a 440 V potential can be present in a panel during a major fault incident.

3.1 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.

4 LOG SCREEN



When an event occurs, that event is added to the log file. Each day has a different log file. Each log file can contain up to 65,535 events. All log files are stored on the attached Micro SD card. The log files are stored in CSV format, so they can be imported from the Micro SD card into a spreadsheet for analysis.

There are 3 different categories of events:

- Calls: all Outstation events, master handset events, and alarm events.
- Faults: all fault occurred and fault cleared events.
- Events: all operating system events.

The different categories are colour coded for easy identification.

4.1 LOG HEADER

The log header contains details for the current log file shown.

Date	Date of log shown
Entry	Range for entries shown
No. of entries	Total number of entries

4.2 LOG ENTRIES

This section shows details for up to 8 events. Each entry has:

- Icon detailing type of event.
- Time event occurred.
- If fault event, shows if fault occurred or cleared.
- Event text.

4.3 LOG NAVIGATION

If there are more than 8 entries in the log, then not all entries will be shown. The log can be navigated using the following options:

Scroll the screen by:

- Touching the text of any entry, then move finger up or down
- Pressing one of the navigation buttons shown on screen
- Pressing the left or right navigation buttons on the panel below the screen

The Navigation Buttons shown on screen are

⏮	Move to first page.
⏩	Move to next page.
⏪	Move to previous page.
⏭	Move to last page.
1	Show calendar screen

4.4 LOG FILTERS

There are 3 different categories of entries: **Calls**, **Faults**, and **Events**. By pressing the relevant button, the entries for that category can be shown or hidden.

4.5 LOG ENTRIES

Each log entry is specified by an icon, a description of the entry, the time of the entry, and if the entry refers to a fault, additional information on whether the fault has occurred or cleared.

4.6 LOG ENTRY ICONS FOR CALL EVENTS

The following is a list of icons associated with Call Events


Incoming Type A Outstation call.


Incoming Type B Outstation call.


Conversation with Type A Outstation.


Conversation with Type B Outstation.


Type A Outstation on hold.


Type B Outstation on hold.


Master handset off hook.


Master handset, Type A Outstation, or Type B Outstation on hook.


ASSIST CALL alarm activated.


ASSIST CALL alarm acknowledged.


ASSIST CALL alarm cancelled.

4.7 LOG ENTRY ICONS FOR FAULT EVENTS

The following is a list of icons associated with Fault Events

 Line open circuit.

 Line short circuit.

 Line earth fault.

 Line card missing associated with this line.

 Master handset open circuit.

 Master handset short circuit.

 Network audio open circuit.

 Network audio short circuit.

 Network data fault.

 Mains failure.

 Battery open circuit.

 Battery short circuit.

 Battery impedance fault.

 CPU fault.

 Faults accepted.

4.8 LOG ENTRY ICONS FOR SYSTEM EVENTS

The following is a list of icons associated with System Events:


New log file created.


System powered and initialised.


Watchdog reset


Time and date changed.


Configuration loaded from SD card


Configuration saved to SD card


Site name changed


Panel name changed


Panel Type And network monitoring changed


Line monitoring, day enable, night enable, and fault enable changed


Outstation name changed


ASSIST CALL alarm name changed


Fault text for line changed


Access level 2 log in


Access level 2 log out


Access level 3 log in


Access level 3 log out

4.9 CALENDAR TO SELECT PREVIOUS LOG FILE

The log for each day is stored as a Comma Separated Variable (CSV) file on the attached Micro SD card. The log for a specific day can be recalled by pressing the calendar button on the log screen, and selecting the desired day on the calendar.

The calendar shows all days for the month displayed. The month can be changed by using the < and > buttons. If there is a log for a specific day, that day will be highlighted. If the day is not highlighted, then there will have been no log entries generated on that day, thus no file will have been created for that day.

Press a highlighted day to show the log for that day.

NOTE: By leaving the log screen to view either the Home, Faults, Calls, or Alarms, when the log screen is shown again, the log for the current day will be shown, and not the historic log.

To return to the log screen without choosing a day, press the Back button.

5 CALL SCREEN

The call screen is used to control the calls and conversations from Outstations.

The Outstations can be Fire Telephones (Type A) or a Disabled Refuge Points (Type B).

Type A Outstation can be combined with a Type B to form a Type C Outstation.

However, the indication of the call depends whether it was the Type A or the Type B that is in use.

When an Outstation is in use, an icon appears that shows the state of that Outstation.

The text associated with Outstation is shown next to the icon. The Outstation status icons are:

 Incoming Type A Outstation call.

 Incoming Type B Outstation call.

 Conversation with Type A Outstation.

 Conversation with Type B Outstation.

 Type A Outstation on hold.

 Type B Outstation on hold.

 Type A connected to remote panel.

 Type B connected to remote panel.

The extension number, panel address and line number of the central highlighted call is displayed below the call list.

5.1 CALL SCREEN OPERATION

An entry can be selected by pressing the icon next to the name. Pressing the middle navigation button selects the central highlighted entry.

Scroll through the directory by either scrolling the screen or using the page navigation buttons until the desired Outstation is displayed on screen (or is the central entry if using the middle navigation button).

Scrolling is accomplished by touching the Outstation text, and moving the finger up or down as appropriate.

The left and right navigation buttons beneath the screen can also be used to scroll the directory.

5.2 ACCEPTING INCOMING CALL

An incoming Type A Outstation call has the icon. An incoming Type B Outstation has the character.

To accept the incoming call:

1. Lift the master handset off its cradle.
2. Scroll through the list until the desired call is on screen (or is the central call, in white, if using the middle navigation button to control the call).
3. Press the icon for the selected call, or press the middle navigation button below the screen to select the central call.

The icon will change to for a Type A Outstation, or for a Type B Outstation. This indicates that a conversation is now possible with the selected Outstation.

5.3 PLACE CALL ON HOLD

If a conversation is to be put on hold:

1. Scroll through the list until the desired call is on screen (or is the central call, in white, if using the middle navigation button to control the call).
2. Press the icon for the selected call, or press the middle navigation button below the screen to select the central call.

The icon will change to for a Type A Outstation, or for a Type B Outstation. This indicates that this conversation has now been placed on hold. If there was also another ongoing conversation as part of a conference call, this other conversation will still be active.

5.4 DISCONNECT ALL CALLS

Placing the master handset back onto its cradle will disconnect all calls. All conversations will end, and the affected Outstations will revert to incoming call. Any Outstations on hold will be taken off hold, and will revert to incoming call.

To stop the incoming call, the Outstation must be cancelled at source, i.e. the person at the Outstation must cancel the call, either by placing the Type A Outstation back onto its cradle, or by pressing the call/cancel button on the Type B Outstation.

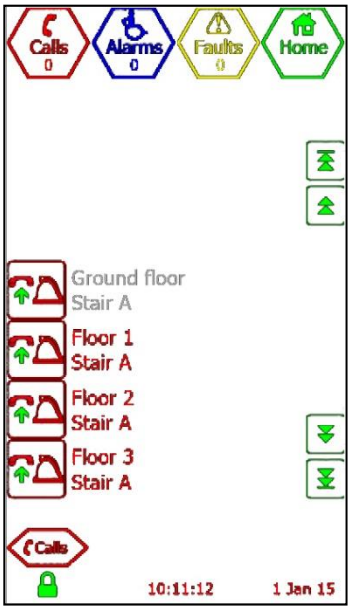
5.5 CALL SCREEN BUTTONS

The buttons associated with the call screen are:

Name Shows directory screen which allows user to choose from the list of allowed extensions.

Dial Shows dial screen which allows user to dial a line by entering extension number.

6 DIRECTORY SCREEN



To place a call to an Outstation, the master handset has to be off hook. Thus, if the master handset is on the cradle, a screen appears informing the user to pick up the master handset.

The directory screen shows the list of all Outstations available to this EVS-TMS, with 7 Outstations displayed on screen at any one time. The icon next to each Outstation shows the state of that Outstation.

Master handsets for remote panels are also shown on this screen. The master handset name displayed is the name for this panel. The remote master handset is considered the same as an Outstation in regards to operating it.

The text below the directory list shows the extension number for the selected Outstation, along with the panel and line index.

The Outstations are shown in alphabetical order.

6.1 DIRECTORY SCREEN OPERATION

An entry can be selected by pressing the icon next to the name. Pressing the middle navigation button selects the central highlighted entry.

Scroll through the directory by either scrolling the screen or using the page navigation buttons until the desired Outstation is displayed on screen (or is the central entry if using the middle navigation button).

Scrolling is accomplished by touching the Outstation text, and moving the finger up or down as appropriate.

The left and right navigation buttons beneath the screen can also be used to scroll the list.

The button moves to first directory entry.

The button moves the directory up one page.

The button moves the directory down one page.

The button moves to the last directory entry.

6.2 PLACING AN OUTGOING CALL TO AN OUTSTATION

To place an outgoing call to an Outstation:

1. Lift the master handset off the cradle.
2. Press the icon on screen for the desired Outstation, or press the middle navigation button below the screen to select the central entry.

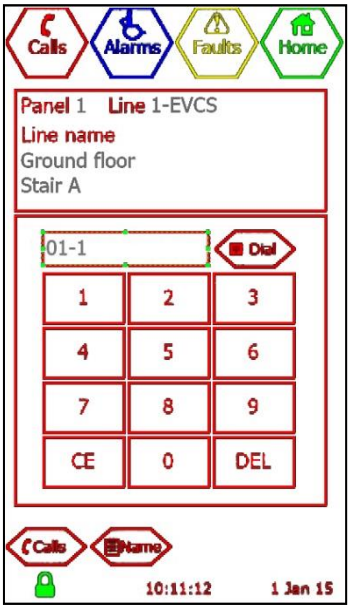
The EVS-TMS will switch to the call screen, and the Outstation text will appear with the icon to indicate the master is calling the Outstation. When the Outstation answers, the conversation will commence immediately.

6.3 DIRECTORY SCREEN BUTTONS

The buttons associated with the directory screen are:

Calls Shows the call screen.

Name Shows dial screen which allows user to dial a line by entering extension number.



7 DIAL SCREEN

To place a call to an Outstation, the master handset has to be off hook. Thus, if the master handset is on the cradle, a screen appears informing the user to pick up the master handset.

The dial screen is used to call any Outstation by entering the extension number for that Outstation. The extension number is a 3 digit number. The first 2 digits are the panel network address, and the third digit is the line number for that Outstation (always between 1 and 8)

When the extension number is entered, the name for that line is displayed. If the line is valid, the dial button appears. If the line is not defined, a warning message is displayed.

To call that Outstation, press the Dial button.

Calls Shows the call screen.

Name Shows directory screen which allows user to choose from the list of allowed extensions.

8 ALARMS SCREEN

Any active or acknowledged ASSIST CALL alarm is shown on the Alarms screen.

If there is one alarm, it is shown in the centre of the screen, with the alarm text in white, and the icon showing the status of the alarm. This alarm is the selected alarm.

If there is more than one alarm, the other alarms are shown either above or below the selected alarm, with the alarm text in blue.

The ASSIST CALL Alarm States are:

 Active ASSIST CALL alarm

 Acknowledged ASSIST CALL alarm

The panel address and line number for the central highlighted alarm is displayed below the alarm list.

8.1 ALARM SCREEN OPERATION

An alarm can be selected by pressing the icon next to the name. Pressing the middle navigation button selects the central highlighted alarm.

Scroll through the directory by either scrolling the screen or using the page navigation buttons until the desired alarm is displayed on screen (or is the central alarm if using the middle navigation button).

Scrolling is accomplished by touching the alarm text, and moving the finger up or down as appropriate.

The left and right navigation buttons beneath the screen can also be used to scroll the list.

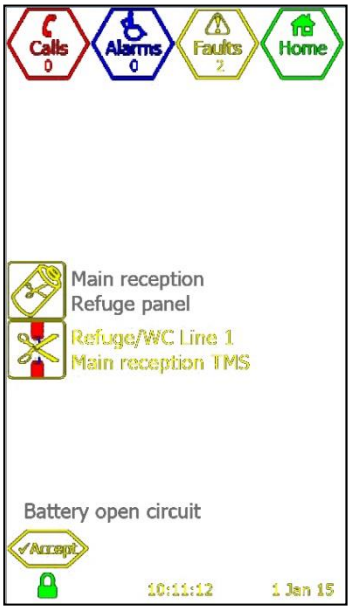
8.2 ACKNOWLEDGE ASSIST CALL ALARM

To acknowledge an alarm:

1. Scroll through the alarms until the desired alarm is on screen (or is the central alarm if using the middle navigation button).
2. Press the alarm icon on screen, or press the middle navigation button below the screen.

This will acknowledge that alarm, and the icon will change to represent this.

9 FAULT SCREEN



The fault screen shows all faults that are current on every panel on the network.

If there is one current fault, is shown in the centre of the screen, with the fault text in white, and the icon showing the type of fault. The fault text is either the panel name, if it is a panel fault, or the customisable fault text for the appropriate line if is it a line fault. The icon depicts the type of fault, and the fault status line at the bottom of the screen describes the type of fault for the central highlighted fault only.

If there is more than one current fault, these faults are shown above and below the selected fault, with the fault text in yellow.

The accept button  is shown if there are unaccepted faults.

9.1 FAULT SCREEN OPERATION

If there is more than one fault, the faults can be scrolled by touching the screen where the fault text is, and moving the finger up or down as appropriate.

The left and right navigation buttons located beneath the screen can also be used to scroll the fault list.

9.2 ACCEPTING FAULTS

If the current faults are unaccepted, the accept button  is shown. Additionally, the fault buzzer will be sounding, and the general fault status LED below the screen will be flashing.

To accept the faults, press the  button.

When faults are accepted, the  button will disappear, the fault buzzer will cease, and the general fault status LED will stop flashing, and be illuminated.

If a new fault occurs, the panel will revert back to the unaccepted state, the fault buzzer will resound, and the general fault status LED will start flashing. The  button will be shown again.

If a fault has been accepted, but not cleared within 8 hours of accepting the fault, the panel will revert back to the unaccepted fault state again. This will re-sound the fault buzzer, flash the general fault status LED, and the  button will be shown.

9.3 FAULT INFORMATION

Press the fault icon to view additional information about the fault. The information provided is:

Fault	Type of fault
Time	Time and date when fault occurred
Panel name	Name of panel where fault occurred
Network address	Network address of panel where fault occurred
Panel type	Type of panel where fault occurred – EVS-TMS, EVS-EX8, EVS-228, or None
Line number	Index of line in fault. This is only shown if the fault is a line fault or a master handset fault
Line type	Type of line in fault. This is only shown if the fault is a line fault or a master handset fault
Line description	Fault description of line in fault. This is only shown if the fault is a line fault

9.4 FAULT TYPES

The faults can be split into two general categories: **panel faults** and **line faults**.

9.4.1 Panel Faults

Panel faults are faults that occur on the panel itself. These are:

 Mains power fault

 Battery missing or open circuit

 Battery short circuit

 Battery impedance fault

 Master handset missing or open circuit

 Master handset short circuit

 CPU failed or watchdogged

 Network audio open circuit on indicated port

 Network audio short circuit on indicated port

 Network data fault

 Panel missing

9.4.2 Line Faults

Line faults are faults that occur on a line attached to the panel. These are:

 Line open circuit or end-of-line missing

 Line short circuit

 Line earth fault

 Line card missing

10 INDICATIONS AND CONTROLS

10.1 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 Red/Blue	Incoming call/ ASSIST CALL alarm at same time

10.2 POWER SUPPLY AND CPU INDICATOR SUMMARY

AC	DC	PSU	CPU	Description
✓				Mains OK
x		✓		Mains failure
✓	✓			Battery OK
✓	x	Flash		Battery open circuit
✓	x	✓		Battery short circuit
✓	Flash	✓		Battery high impedance
✓		✓	✓	PSU processor fail
✓			✓	Display or Exchange Processor Fault or Display-Exchange Comms Fit

✓ = LED illuminated x = LED off Flash= LED Flashing

11 MAINTENANCE

It is a requirement of BS 5839-9:2011 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 Copy all log files from the on-board Micro SD Card, and erase log directory before replacing card (to prevent out of memory errors)
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.

12 CERTIFICATE

Combined Certificate for Design Installation and Commissioning for an Emergency Voice Communication System (EVCS) to BS 5839 Part 9 (2011)

Site Name _____

Address _____

Customer _____

Address _____

Areas Covered _____

☐ **System Design:**

In accordance with **section 1** of BS 5839 : Part 9 : 2011 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 : Part 9 : 2011, 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 : Part 9 : 2011: sub clause **21.2C**

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 BS 5839: Part 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 BS 5839 : Part 9 : 2011.

Engineer _____

Date _____

Position _____

Signature: _____

13 SITE SPECIFIC INFORMATION

Responsible Person _____

Date _____

Position _____

Signature: _____

Equipment Locations

Location _____

Cable ID	Line	Area Served
	1	
	2	
	3	
	4	
	5	
	6	
	7	
	8	

14 LOG BOOK PAGE 1

Date	Event or Work Done	Engineer	Company	Signature
	Technoswitch System commissioned			

15 TECHNICAL SPECIFICATION

Product Code	VS-EVS-TMS	VS-EVS-EX8
Power Supply and Charger		
AC Input	230 V AC+- 10% 50/60 Hz	230 V AC+- 10% 50/60 Hz
Internal Power Supply	12 V DC nominal	12 V DC nominal
Supply and Battery	Monitored open, Short, Fuses	Monitored open, Short, Fuses
Protection	Deep discharge, Short, Thermals	Deep discharge, Short, Thermals
Temperature Compensation	Yes	Yes
Battery Information	1x 12 V 7A H VRSLA	1x 12 V 7 AH VRSLA
Mains Fuse	1 A HRC(T)	1 A HRC(T)
Battery Fuse	Self-Resetting PTC	Self-Resetting PTC
Max Charge Current	500 mA	500 mA
Inputs		
Number of Lines	Between 2 and 8	Between 2 and 8
Remote Enable	Short to use	Short to use
End-of-Line Monitoring	10KΩ 0.6watt resistor	10KΩ 0.6watt resistor
Relay outputs		
Number and Type	2: Fault and In use, volt free 30 V DC 1 A	2: Fault and In use, volt free 30 V DC 1 A
Controls		
Number and Type	3 Push Button Navigation Keys	None
Indication		
Number and Type	3x PSU Status Indicators 1 x CPU Fault Indicators 1x General Fault Indicator 1x RGB Mode Indicator 1x 272x480xRGB Touchscreen	3x PSU Status Indicators 1 x CPU Fault Indicators 1x General Fault Indicator 1x RGB Mode Indicator 8x RGB Line Indicators
Enclosure Details		
Back-box Finish	RAL 7035 Grey	RAL 7035 Grey
Dimensions	350 x 300 x 90	220 x 300 x 90
Entries	14 knockouts top, 2x rear slots	14 knockouts top, 2x rear slots
Flush Cut-out	352 x 302 x 80 deep	N/A

The Technoswitch VS-EVS-TMS EVCS is designed and manufactured in the UK for Technoswitch by:
Vox Ignis Ltd,
Unit 72T Wearfield
Enterprise Park East,
Sunderland,
SR5 2TH.

WEEE
Compliant
Product

16 WARRANTY

General Terms and Conditions are available from the Technoswitch website www.technoswitch.co.za. Alternatively, please contact your local Sales Office for further information.

17 DISCLAIMER

Although the contents of our product literature have been prepared with the greatest care, Technoswitch can accept no liability whatsoever for any direct or indirect damages of any kind that may arise due to either errors or omissions in them, or amendments to products or other specifications following publication.

18 REVISION INFORMATION

Revision	Date Issued	Reason for Change	Reference
Rev 07.00	20190919	New Manual	Doc PViLXTMS 7001-06 Rev 7 2019

NOTES

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