TECHNOSWITCH
FIRE DETECTION & SUPPRESSION

VS-EVS-228

EVCS Master Station

Rev 07.00

USER MANUAL, COMMISSIONING CERTIFICATES & LOG BOOK

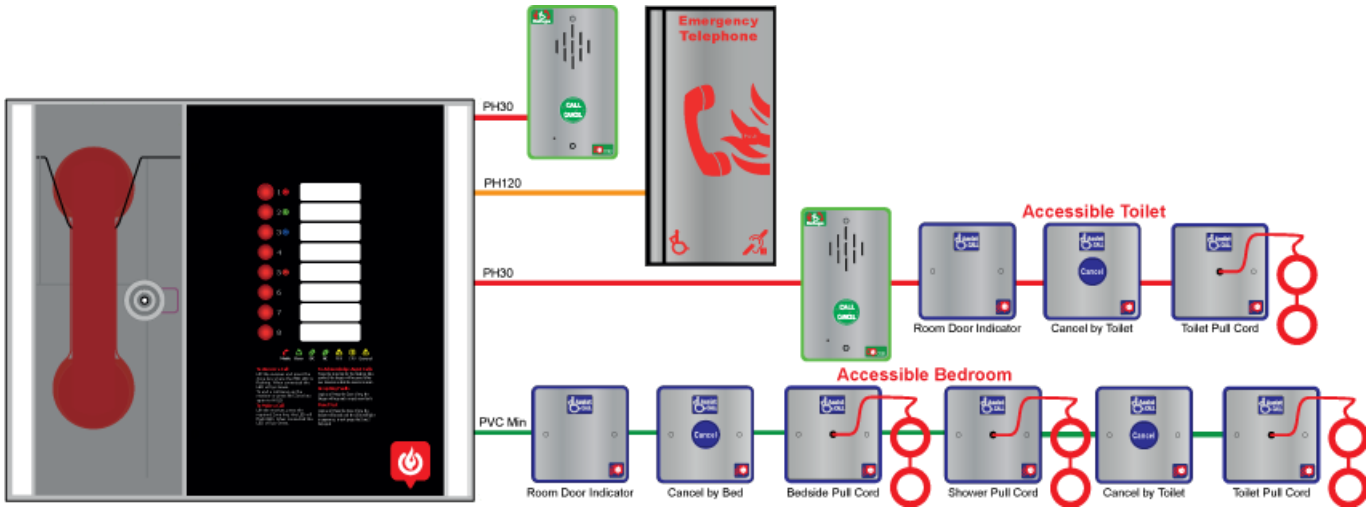


Table of Contents

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-228 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.

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.

3 PRODUCT OVERVIEW

The Technoswitch EVCS, or VS-EVS-228, 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 an Outstation, or connected to a dedicated line. As each line is powered from the Master Station, the Outstations and the ASSIST CALL emergency 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.

Each VS-EVS-228 Master Station can also perform as a VS-EVS-228 Repeater Station (hereafter also referred to as EVS-228). A EVS-228 Repeater Station mimics the EVS-228 Master Station both in operation and indication. Any reference in this document to the VS-EVS-228 Master Station also applies to the VS-EVS-228 Repeater Station, unless specified otherwise.

The VS-EVS-228 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.

4 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-228 Master/Repeater Station requires a 3 A spur, returning to a breaker clearly marked "**EVCS DO NOT TURN OFF"**.

If the EVS-228 Master Station and the EVS-228 Repeater Station are distributed around a site, it is essential that both Stations 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 an EVS-228 Station during a major fault incident.

4.1 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.

4.2 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 VS-EVS-228 Master/Repeater Station requires **one** 12V 7AH sealed lead acid battery. The battery is not supplied with the VS-EVS-228 Master/Repeater Station.

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 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. When connecting batteries, always connect the Positive (Red +) terminal first.

Power Down Procedure

Disconnect the batteries before removing the mains power. When disconnecting batteries, always remove the Negative (Black –) terminal first.

5 OPERATION

All conversations are under the command of the VS-EVS-228 Master Station.

5.1 RECEIVING A CALL

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.

Lift the Master handset receiver. The User LED will illuminate Red.

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.

5.2 MAKING A CALL

To make a call, lift the Master handset receiver and the User LED will illuminate red.

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.

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.

5.3 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 VS-EVS-228 Master Station, replace the Master handset receiver back on its hook.

NOTE: 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.

5.4 PUTTING A CALL ON HOLD

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.

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.

5.5 CONFERENCE CALL

Depending upon the number of Line Cards fitted in the VS-EVS-228 Master Station, up to eight lines can be connected to the conference call. See 5.1 for Receiving A Call, and 5.2 for Making A Call to each individual Outstation. The VS-EVS-228 Master Station controls which lines are involved in the conference, and only one conference group is allowed.

5.6 ACKNOWLEDGING ASSIST CALL ALARMS

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.

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.

5.7 ACCEPTING FAULTS

Before accepting faults, the fault must be noted in the log book, along with the time the fault was reported.

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.

Press zone button 8 to exit this menu and to return to the menu options.

The buzzer will resound on each new fault.

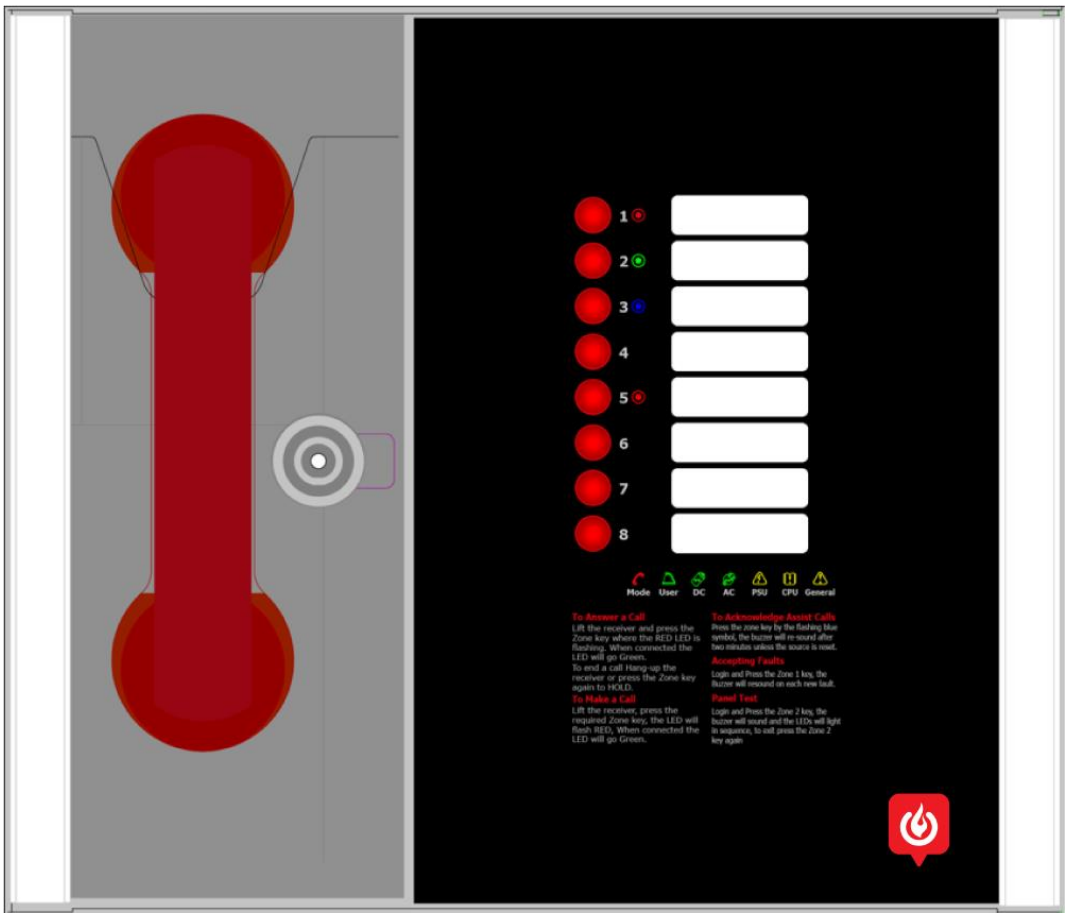
5.8 PANEL INDICATOR TEST

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.

All LEDs will illuminate in a predefined sequence, and the buzzer will sound.

Press zone button 8 to stop the panel indicator test and to return to the menu options.

6 INDICATIONS AND CONTROLS



6.1 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

6.2 POWER SUPPLY AND CPU INDICATOR SUMMARY

AC	DC	PSU	General	CPU	Description
✓					Mains OK
x		Flash	Flash		Mains failure
✓	✓				Battery OK
✓	x	Flash	Flash		Battery open circuit
✓	x	✓	Flash		Battery short circuit
✓	Flash	✓	Flash		Battery high impedance
✓		✓	Flash	✓	PSU processor fail
✓			Flash	✓	Display or Exchange Processor Fault or Display-Exchange Comms flt
✓			Flash		Display or Exchange Processor Fault or Display-Exchange Comms flt on remote panel (if applicable)
✓	Flash		Flash		Remote Battery fault
Flash			Flash		Remote Mains fault

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

NOTE: When faults are accepted the general LED illuminates solid.

6.3 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

6.4 ZONE INDICATOR SUMMARY

Zone Indicator Status	User Indicator Status	Buzzer Status	Description
Slow flash red		Off	Outgoing call
Fast flash red		Ringing	Incoming call from Type A Outstation
Normal flash red		Ringing	Incoming call from Type B Outstation
Normal flash green	Normal flash green	Off	Call connected to local master handset
Normal flash green/red	Normal flash green/red	Off	Call on hold
Normal flash green/white	Solid White	Off	Call connected via a remote master handset
Solid yellow		On	Line Short circuited
Slow flash yellow		On	Line Card missing
Normal flash yellow		On	Line Open circuit or EOL missing
Fast flash yellow		On	Line Earth fault
Solid cyan	Solid cyan	Off	Access Level 2
Solid magenta	Solid magenta	Off	Access Level 3
Normal flash blue		2 Tone Alarm	Incoming ASSIST CALL alarm
Solid blue		Intermittent double Beep	ASSIST CALL acknowledged

7 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:

Mode	Description
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.

8 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: _____

9 SITE SPECIFIC INFORMATION

Responsible Person _____

Date _____

Position _____

Signature: _____

Equipment Locations

VS-EVS-228 Location _____

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

10 LOG BOOK PAGE 1

Date	Event or Work Done	Engineer	Company	Signature
	Technoswitch System commissioned			

LOG BOOK PAGE ___

Date	Event or Work Done	Engineer	Company	Signature

LOG BOOK PAGE ___

Date	Event or Work Done	Engineer	Company	Signature

11 TECHNICAL SPECIFICATION

Product Code	**VS-EVS-228**
Power Supply and Charger	
AC Input	230 V AC ± 10% 50/60 Hz
Internal Power Supply	12 V DC nominal
Supply and Battery	Monitored Open, Short, Fuses
Protection	Deep discharge, Short, Thermals
Temperature Compensation	Yes
Battery Information	Space for Up to 1x 12 V 7 AH VRSLA
Mains Fuse	1 A HRC(T)
Battery Fuse	Self-Resetting PTC
Max Charge Current	500 mA
Inputs	
Number of Lines	Between 2 and 8
Remote Enable	Short to use
End-of-Line Monitoring	10kΩ 0.6 watt resistor
Relay Outputs	
Number and Type	2: Fault and In use, volt free 30 V DC 1 A
Controls	
Number and Type	8 Push Button Zone Keys
Indication	
Number and Type	8x RGB Line indicators 3x PSU Status Indicators 1 x CPU Fault Indicators 1x General Fault Indicator 1x RGB Mode Indicator 1x User Status Indicator
Enclosure Details	
Back Box Finish	RAL 7035 Grey
Dimensions	350 x 300 x 95
Entries	14 knockouts top, 2x rear slots
Flush Cut-out	352 x 302 x 85 deep

The VS-EVS-228 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

12 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.

13 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.

14 REVISION INFORMATION

Revision	Date Issued	Reason for Change	Reference
Rev 07.00	20190919	New Manual	Doc PViLX228 7004-6 Rev 7 2019

NOTES

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FIRE DETECTION & SUPPRESSION

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