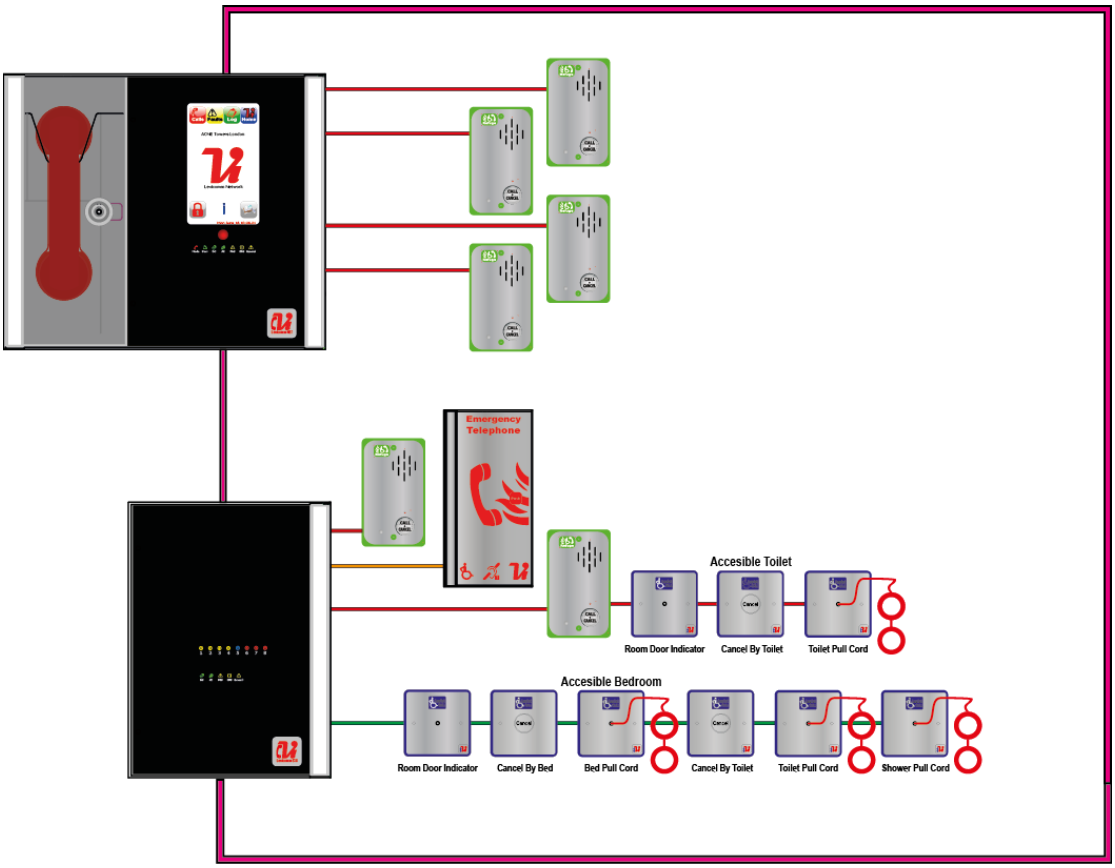
Lexicomm ViLX-TMS EVCS Master Station



User Manual, Commissioning Certificates and Log Book

Version 0- February 2016

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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 an 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 Lexicomm ViLX-TMS 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 all buildings other than pure dwelling houses over one story. Refuge areas should be provided at each storey exit to every protected stairway as directed in Building Regulations Approved Document B1.

Emergency Assist Alarm Systems as recommended by BS8300 and Building Regulations Approved Document M, including the remote accept facility required.

2 Product Overview

The Lexicomm EVCS has been designed around a total network concept so all of the Lexicomm panels have inbuilt networking.
The system comprises 3 types of panel; ViLX-TMS touch screen master station (hereafter referred to as TMS), the ViLX-228 2 to 8 line master station (hereafter referred to as LX228) and a ViLX-EX8 system expander panel (hereafter referred to as EX8). For Lexicomm systems in excess of 8 lines a TMS must be used as the master station, the system can then be expanded by the use of an EX8 or LX228 in blocks of 8 lines up to a maximum system capacity of 512 lines. Additional 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 EX-8 and any TMS or LX228 are wired in a ring network up to a maximum of 64. The EX-8 would typically be sited in convenient locations close to the outstations i.e. risers or stairwells resulting in short vertical wiring runs. The LX228 can be used to provide local control of up to 8 lines within a building this can then report back to a 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 TMS or 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 EN60065 (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 TMS and EX8 requires a 3A spur, returning to a breaker clearly marked "**EVCS DO NOT TURN OFF"**.

If the TMS, LX228 and the EX8 are distributed around a site, it is essential that all panels 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 panel 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.

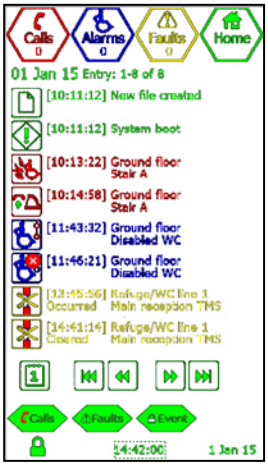
Before handling any static-sensitive items, operators should get rid of any electrostatic charge by touching a sound safety earth. Always handle PCBs by their sides and avoid touching any components.

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.



4.1.1 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

4.1.2 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.

4.1.3 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

4.1.4 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.

4.1.5 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.

4.1.6 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.

4.1.7 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.

4.1.8 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

4.1.9 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.

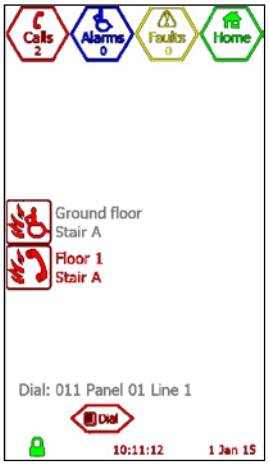
The calendar shows all days for the month displayed. The month can be changed by using the < and > buttons. If there is a log for a specific day, that day will be highlighted. If the day is not highlighted, then there will have been no log entries generated on that day, thus no file will have been created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

4.2 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.

4.2.1 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.

4.2.2 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.

4.2.3 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.

4.2.4 Disconnect all calls

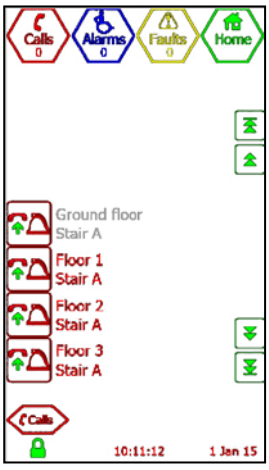
Placing the master handset back onto its cradle will disconnect all calls. All conversations will end, and the affected outstations will revert to incoming call. Any outstations on hold will be taken off hold, and will revert to incoming call.
To stop the incoming call, the outstation must be cancelled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

4.2.5 Call screen buttons

The buttons associated with the call screen are:

	Shows directory screen which allows user to choose from the list of allowed extensions.
	Shows dial screen which allows user to dial a line by entering extension number.

4.3 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 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.

4.3.1 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.

4.3.2 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.

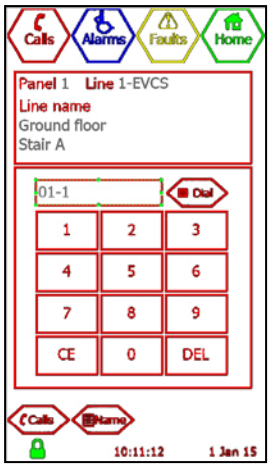
The TMS will switch to the call screen, and the outstation text will appear with the icon  to indicate the master is calling the outstation. When the outstation answers, the conversation will commence immediately.

4.3.3 Directory screen buttons

The buttons associated with the directory screen are:

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

4.4 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  button.

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

4.5 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.

4.5.1 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.

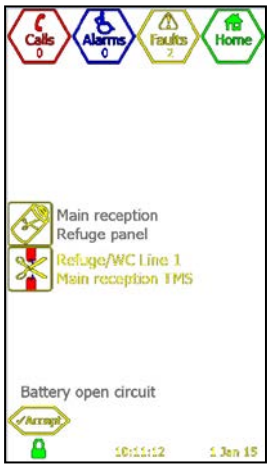
4.5.2 Acknowledge Assist Call alarm

To acknowledge an alarm:

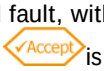
1. Scroll through the alarms until the desired alarm is on screen (or is the central alarm if using the middle navigation button).
2. Press the alarm icon on screen, or press the middle navigation button below the screen.

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

4.6 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.

4.6.1 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.

4.6.2 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.

4.6.1 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 – TMS, EX8, LX228, 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

4.6.2 Fault types

The faults can be split into 2 general categories: panel faults and line faults.

4.6.3 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

4.6.4 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

5 Indications and Controls

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

5.2 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 flt

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

6 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.

7 Certificate

Combined Certificate for Design Installation and Commissioning for an Emergency Voice Communication System (EVCS) to BS5839 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 BS5839: 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 BS5839 : Part 9 : 2011.

Engineer _____

Date _____

Position _____

Signature: _____

8 Site Specific Information:

Responsible Person _____

Date _____

Position _____

Signature:

_____

Equipment Locations

Location _____

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

Log Book Page 1

Date	Event or Work Done	Engineer	Company	Signature
	Lexicomm System commissioned			

9 Technical Specification

Product Code	ViLX-TMS	ViLX-EX8
Power Supply and Charger		
AC Input	230Vac+- 10% 50/60Hz	230Vac+- 10% 50/60Hz
Internal power supply	12Vdc nominal	12Vdc 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 12V 7AH VRSLA	1x 12V 7AH VRSLA
Mains fuse	1A HRC(T)	1A HRC(T)
Battery fuse	Self Resetting PTC	Self Resetting PTC
Max charge current	500mA	500mA
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 30Vdc 1A	2: Fault and In use, volt free 30Vdc 1A
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 Cutout	352 x 302 x 80 deep	N/A

The Lexicomm ViLX-TMS EVCS is designed and manufactured in the UK by:

Vox Ignis Ltd,
Unit 72T Wearfield
Enterprise Park East,
Sunderland,
SR5 2TH.

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WEEE Compliant Product

CE