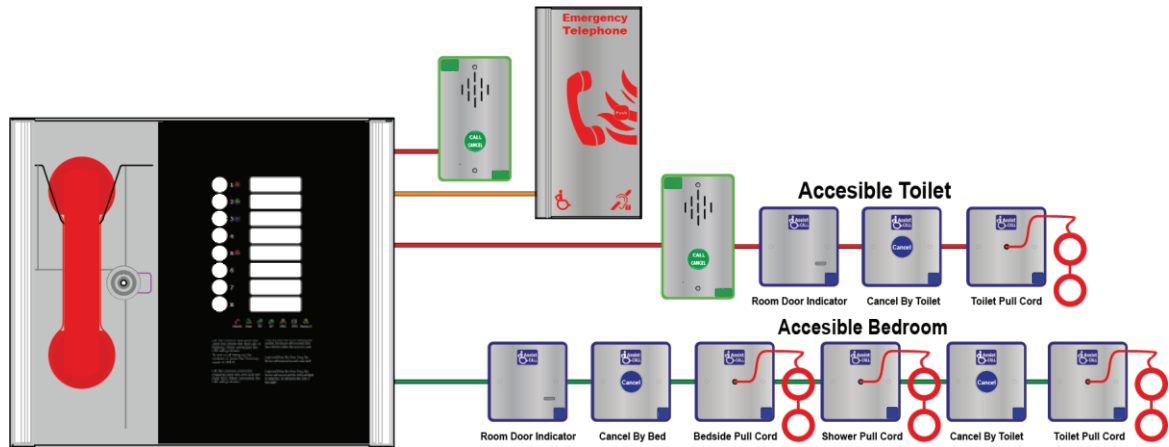




Beacon Master Station



User Manual, Certificates and Log Book

Site Name

Address

Contractor

Commissioned



Table of Contents

1. Introduction.....	3
1.1 What is an Emergency Voice Communication System	3
1.2 Suitability	3
2. Product Overview.....	3
3. Important Safety Information.....	4
3.1 Battery Information.....	4
4. Operation.....	5
4.1 Receiving a call.....	5
4.2 Making a call	5
4.3 Ending a call.....	5
4.4 Putting a call on hold.....	5
4.5 Conference Call.....	5
4.6 Acknowledging "Assist Call" alarms	5
4.7 Accepting Faults.....	5
4.8 Panel Indicator Test	5
5. Indications and Controls	6
5.1 Mode Indicator Summary.....	6
5.2 Power supply and CPU indicator Summary.....	6
5.3 User Indicator Summary	6
5.4 Zone indicator summary	7
6. Maintenance	7
7. Certificate.....	8
8. Site Specific Information:	9
Responsible Person.....	9
Equipment Locations.....	9
9. Technical Specification.....	12

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 Beacon BM2/4/8 Emergency Voice Communications System (EVCS) is designed to fully comply with BS5839 Part 9:2021 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

The Beacon EVCS, or BM2/4/8 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 Beacon Master Station can also perform as a Beacon Repeater Station. A Beacon Repeater Station mimics the Beacon Master Station both in operation and indication. Any reference in this document to the Beacon Master Station also applies to the Beacon Repeater Station, unless specified otherwise.

The Beacon 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.



Caution

Warning

Warning

Warning

Warning



Indoor Use Only

Shock Hazard-

Isolate Before Opening

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE

THIS UNIT MUST BE EARTHED

NO USER SERVICEABLE PARTS



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

If the Beacon Master Station and the Beacon Repeater Station are distributed around a site, it is essential that both Beacon 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 Beacon 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 9:2021 requires battery backup for 24 hours standby and 3 hours operation thereafter.

A Beacon Master/Repeater Station requires **one number** 12V 7AH vent regulated sealed lead acid battery. The battery is not supplied with the Beacon 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 means large currents will flow if they are accidentally short circuited causing burns and a risk of fire. <i>Exercise caution when handling batteries.</i></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 Beacon Master Station.

4.1 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.

4.2 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.

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 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.

4.4 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.

4.5 Conference Call

Depending upon the number of Line Cards fitted in the Beacon Master Station, up to eight lines can be connected to the conference call. See 4.1 for receiving a call, and 4.2 for making a call to each individual outstation. The Beacon Master Station controls which lines are involved in the conference, and only one conference group is allowed.

4.6 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.

4.7 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.

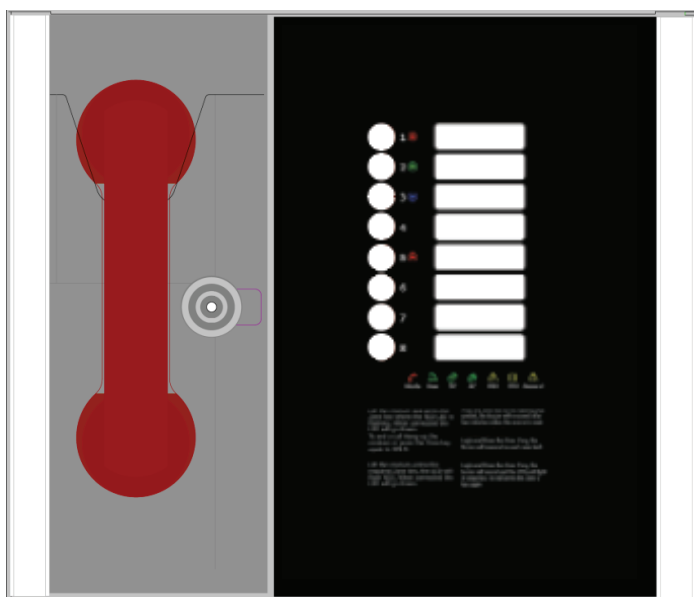
4.8 Panel Indicator Test

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.

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
Flashing Red/Blue	Incoming call/ Assist Call alarm at same time

5.2 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 fit
✓			Flash		Display or Exchange Processor Fault or Display-Exchange comms fit 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.

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

5.4 Zone indicator summary

Zone Indicator Status	User Indicator Status	Buzzer Status	Description
Slow flash red		Off	Outgoing call
Fast flash red		Ringling	Incoming call from type A outstation
Normal flash red		Ringling	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

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.

7. Certificate

Combined Certificate for Design Installation and Commissioning for an Emergency Voice Communication System (EVCS) to BS5839 part 9 (2021)

Site Name _____

Address _____

Customer _____

Address _____

Areas Covered _____

<input type="checkbox"/> System Design: In accordance with section 1 of BS 5839 : Part 9 : 2021 sub clause 6 the system design is has in accordance with the recommendations of this code except for the following:
<input type="checkbox"/> Installation: In accordance with section 3 of BS 5839 : Part 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:
<input type="checkbox"/> Commissioning: In accordance with Section 4 of BS 5839 : Part 9 : 2021: sub clause 22C) <ol style="list-style-type: none">1. Intelligible conversation is heard at all locations.2. All controls and indicators operate correctly
<input type="checkbox"/> Acceptance: The system is accepted in good working order and, in accordance with BS5839: Part 9, 2021, 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 : 2021.

Engineer _____

Date _____

Position _____

Signature: _____

8. Site Specific Information:

Responsible Person _____

Date _____

Position _____

Signature: _____

Equipment Locations

BM2/4/8 Location _____

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

9. Technical Specification

Product Code	BM2/4/5
Power Supply and Charger	
AC Input	230Vac+10%- 20% 50/60Hz
Internal power supply	12Vdc nominal
Supply and battery	Monitored open, Short, Fuses
Protection	Deep discharge, Short, Thermals
Temperature compensation	Yes
Battery information	Space for Up to 1x 12V 7AH VRSLA
Mains fuse	1A HRC(T)
Battery fuse	Self Resetting PTC
Max charge current	500mA
Inputs	
Number of lines	Between 2 and 8
Remote enable	Short to use
End of line monitoring	10KΩ 0.6watt resistor
Relay outputs	
Number and type	2: Fault and In use, volt free 30Vdc 1A
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 Cutout	352 x 302 x 85 deep



Elite Security Products UK, Unit 7 Target Park, Shawbank Road, Lakeside, Redditch, Worcestershire, B98 8YN
Tel +44(0)1527 515 150, Fax +44(0)1527 150 143; Email info@espuk.com
Registered in England Number Company Registration No: 02769392, VAT Registration GB614686525

For more product information please visit www.espuk.com
E&OE - Errors and omissions excepted.K21

