



OmniCALL EVC System

Installation & Commissioning Manual



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This equipment has been designed and manufactured to conform to both CE & UKCA requirements

Failure to use the equipment in the manner described in the product literature will invalidate the conformity.

A “Declaration of Conformity” statement and a “Declaration of Performance” is available on request.

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AMENDMENT RECORD

Change Note Number	Nature of Amendment	Date of Amendment
NA	Initial Release	June 2025

PROPRIETARY NOTICE

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In the interest of continual product development, Baldwin Boxall Communications Limited reserves the right to make changes to product specification without notice or liability. Use of Baldwin Boxall Communications Limited products as critical components in life support systems is not authorised except with express written approval from Baldwin Boxall Communications Limited.

GENERAL INFORMATION


Personnel who install, maintain or repair this equipment must read the safety information below before starting work.

This Manual contains Warnings, Cautions and Notes.

Warnings describe potential threats to health or life, e.g.

	<p>WARNING</p> <p>Before attempting to remove this component, ensure the Mains Power Supply and Battery Backup have been disconnected.</p>
---	---

Cautions describe potential threats to the equipment, e.g.

	<p>CAUTION</p> <p>Notice must be taken of all cautions. If a Caution is ignored the equipment may be damaged.</p>
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Notes are statements that are useful to the user in the context of a particular section of the manual, e.g.



NOTE: This is an example of a note.





ENVIRONMENTAL CONDITIONS

This equipment must not be installed in an area that is subject to a corrosive atmosphere, excessive moisture or may allow water or other liquids to come into contact with the unit or its external connections. Unless otherwise stated, all items are IP30.

AC Supply Voltage	230V - 15% +10% RMS 50Hz AC
DC Supply Voltage	18V to 36V DC
Temperature (Operating & Storage)	0°C up to +40°C
Humidity Range	0% - 90% Non-Condensing

In the close proximity of some radio frequency transmitting devices, the signal to noise ratio of this product may be reduced. If this occurs, re-location of the equipment or the signal cables is recommended.

SAFETY AND STATUTORY INFORMATION

	<p>CAUTION</p> <p>These Safety Precautions apply to assembled systems, however they may not all be applicable to every item within that system.</p> <p>Failure to follow these instructions and guidelines may cause personal injury and/or damage to the equipment.</p>
	<p>WARNING</p> <p>This equipment is intended for continuous operation and as such should be permanently connected to the mains supply.</p> <p>This unit does not contain an external mains switch. For servicing, an all-pole Switch / Circuit Breaker with a separation of 3 mm in each pole should be incorporated in the electrical supply spur feeding the unit, and this must be suitably marked to prevent inadvertent or accidental usage.</p>
	<p>WARNING</p> <p>Always ensure that this equipment is correctly earthed by connection to an AC mains supply with a protective earth connection.</p>
	<p>WARNING</p> <p>If Functional Testing, Maintenance, or Repair is to be completed with the Mains Power (and/or battery backup) connected then this should only be undertaken by personnel who are fully aware of the danger involved and who have taken adequate precautions and training.</p> <p>Terminals marked with the "High Voltage" symbol are considered hazardous and the external wiring connected to these terminals requires installation by suitably trained personnel.</p>

**WARNING**

The 24V DC batteries used within this system can deliver extremely high currents that can cause fire or burns. Care should be taken to ensure tools or jewellery etc. are prevented from causing a Short Circuit.

**WARNING**

Batteries shall not be exposed to excessive heat such as sunshine, fire or the like.

**WARNING**

If battery isolation / disconnection is required then the interconnecting fuse between the batteries should be removed first.

**WARNING**

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type. Dispose of battery carefully to avoid environmental damage. Do not dispose of battery in a fire.

**CAUTION: ELECTRO-STATIC SENSITIVE DEVICES**

Observe the relevant precautions for the protection of Electro-static Sensitive Devices when handling this equipment.

CAUTION

This product must only be disposed of in accordance with the WEEE directive.

LIFE SAFETY EQUIPMENT

Only competent engineers with relevant product knowledge should install, commission, or maintain this equipment.

In depth knowledge of BS5839-9 is required to install, commission, or maintain this equipment.

COMMENTS

Comments regarding the content of this manual are welcome and should be addressed to hello@baldwinboxall.co.uk.

1 Technical Description

1.1 DESCRIPTION

The OmniCALL EVC System is a fully addressable Emergency Voice Communication System that allows Disabled Refuge, Fire & Emergency Telephones, and Disabled Toilet Alarm Remote Units to be connected to just one system via either Loop or Radial cabling. It has been developed in accordance with BS5839-9:2021, BS8893:2024 and BS8300:2018 (for the Disabled Toilet Alarm).

The system has two main components - the Master Control Panel and the Remote Units. The Remote Units are supplied in five different styles to suit any installation.

1.2 TECHNICAL SPECIFICATIONS

1.2.1 Control Panels

Control Panels	
System self-monitoring	BS5839-9 / BS8893 compliant
Remote signalling of fault	Volt-free contact, closing/opening set on installation
LED Indication	Power, System Fault, General Fault, Fuse Fault, Charger Fault, Battery Low Fault, Battery High Resistance Fault
Display	5" High Brightness TFT Display for control and outstation status indication
Transmission capability	Half-duplex (Type A Outstations) speech steered. Full Duplex (Fire Telephones)
Outstations Max	32
Outstation Connection	via Line Card
Connection Expansion	1 line card built in 3 x Additional Line Card Slots (for OLC)
Line Card	Up to 32 outstations per loop or up to 4 radial connections
Power supply	85-264 AC autoswitching, battery backed with built in batteries & charger
Power consumption	Max 75W (OCCP32)
Dimensions (W x H x D)	430mm x 430mm x 190mm
Weight	Upto 33KG (Max 33Ah Batteries)
Bezel dimensions (W x H x D)	470mm x 470mm x 25mm
Knockouts	24 x 20mm diameter in top
Security	Lockable handset door
Temperature Range	-5°C to +40°C (storage and operating)
Humidity Range	95% Non Condensing

Figure 1.1 – Typical OmniCALL Control Panel



1.2.2 Type B Disabled Refuge (OCBRG)

Disabled Refuge Remote	
Indicators	Status
Labeling	Braille Luminescent
Remote signalling of occupancy	18-36V output for switching relay
Assistance Call / DTA Connection	1 monitored input - 2 x 3 part DTA Kit (single address) or 1 x Accessible bedroom (4 active devices)
Front Panel Controls	Call Button
Internal Controls	Speaker Volume, DTA Kit DIP Switches
Power supply	15 - 36V DC
Current consumption	22mA @ 24V quiescent, 31mA @24V in use
Dimensions (W x H)	150mm x 90mm
Backbox	Not supplied as standard requires; standard double gang 47mm deep or OCBRG-BB - Surface Green or OCBRG-PBBF - Plasterboard (Fire Rated)
Weight	1Kg
Temperature Range	-5 to + 40°C (storage and operating)

Figure 1.2 – Typical Disabled Refuge Remote



1.2.3 Type B Advance Refuge Remote (OCBARG)

Advanced Disabled Refuge Remote	
Indicators	Status
Labeling	Braille Luminescent
Remote signalling of occupancy	18-36V output for switching relay
Assistance Call / DTA Connection	1 monitored input - 2 x 3 part DTA Kit (single address) or 1 x Accesible bedroom (4 active devices)
Front Panel Controls	Call Button
Internal Controls	Speaker Volume, DTA Kit DIP Switches
Power supply	15 - 36V DC
Current consumption	22mA @ 24V quiescent, 70mA @24V in use
Dimensions (W x H x D)	134mm x 134mm x 64mm
Bezel Dimensions (W x H)	154mm x 154mm
Bezel Cutout (W x H)	136mm x 136mm
Weight	1Kg
Temperature Range	-5 to + 40°C (storage and operating)

Figure 1.3 – Typical Advance Disabled Refuge Remote



1.2.4 Type A Fire Telephone (OCAFRP)

Fire Telephone Outstation	
Indicators	System OK
Assistance Call / DTA Connection	1 monitored input - 2 x 3 part DTA Kit (single address) or 1 x Accessible bedroom (4 active devices)
Beacon Interface	18-36V (monitored)
Labeling	Luminescent
Power supply	15 - 36V DC
Current consumption	22mA @ 24V quiescent, 31mA @24V in use
Dimensions (W x H x D)	Surface Mount: 130mm x 350mm x 80mm Bezel: 170mm x 390mm x 20mm Bezel cut out: 138mm x 358mm
Knockouts	20mm and 25mm diameter in top
Weight	4 Kg
Temperature Range	-5 to + 40°C (storage and operating)

Figure 1.4 – Typical Fire Telephone Remote



1.2.5 Emergency Telephone Remote Unit (OCASGP)

The OCASGP Emergency Telephone has the same mechanical and technical specification as the Fire Telephone (OCAFRP) but the outer case is finished in green instead of red.

1.2.6 Combined Disabled Refuge / Fire Telephone (OCCCRP)

Combined Telephone Outstation	
Indicators	System OK
Assistance Call / DTA Connection	1 monitored input - 2 x 3 part DTA Kit (single address) or 1 x Accessible bedroom (4 active devices)
Beacon Interface	18-36V (monitored)
Labeling	Luminescent
Power supply	15 - 36V DC
Current consumption	22mA @ 24V quiescent, 31mA @24V in use
Dimensions (W x H x D)	Surface Mount: 130mm x 395mm x 80mm Bezel: 170mm x 435mm x 20mm Bezel cut out: 138mm x 403mm
Knockouts	20mm and 25mm diameter in top
Weight	4 Kg
Temperature Range	-5 to + 40°C (storage and operating)

Figure 1.5 – Typical Combined Disabled Refuge / Fire Telephone



1.2.7 Disabled Toilet Alarm Kit (DTAKIT)

DTAKIT Disabled Toilet Alarm	
OmniCALL System Interface	OCACIF Interface or Outstation
Power Supply	Line Powered (External Supply Not Required)
Alarm Type	90dB @ 30cm
Battery Backup	N/A
Dimensions	W x H x D (Excluding backbox)
Over door Light / Sounder	85mm x 85mm x 58mm
Reset point	85mm x 85mm x 13mm
Ring Pull	30mm x 80mm diameter (fixing centres)
Cable Requirements	Security alarm cable 7/0.2 or similar
Back Box Requirements	<i>Back boxes are not supplied with the Disabled Toilet Alarm</i>
Over door Light / Sounder	25mm deep single gang flush box or "round cornered" plastic surface box is required
Reset Point	25mm deep single gang flush box or "round cornered" plastic surface box is required
Ring Pull	Supplied with its own surface mount enclosure

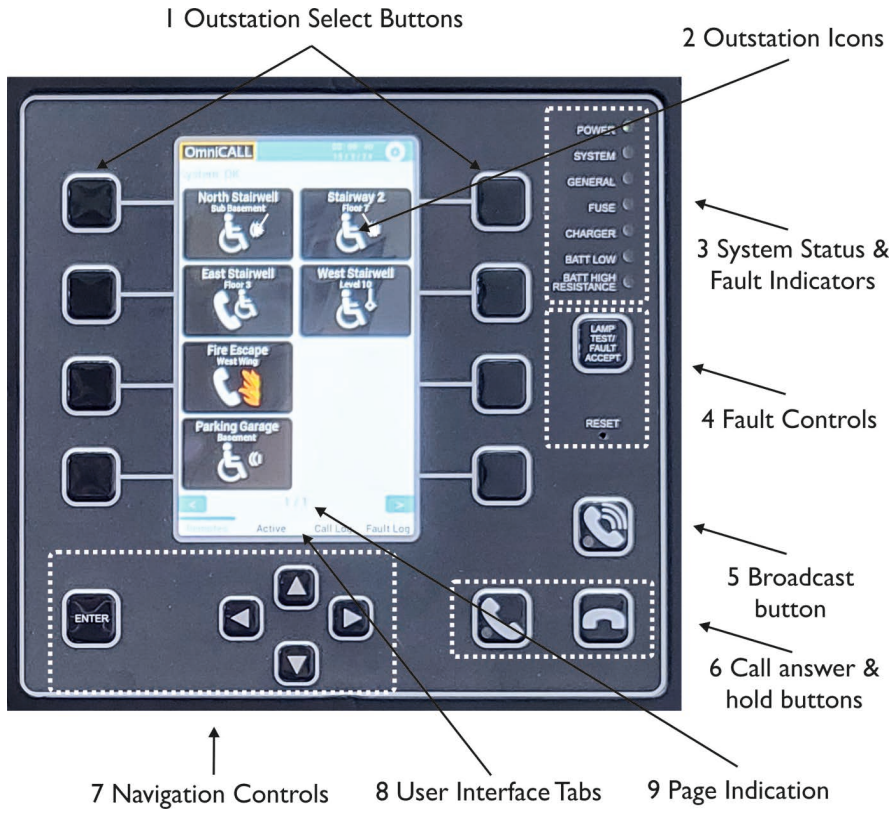
Figure 1.6 – DTAKIT Disabled Toilet Alarm



NOTE: The DTAKIT Disabled Toilet Alarm kit interfaces with a OCACIF interface unit or directly to any OmniCALL Remote.

1.3 CONTROL PANEL LEDs & CONTROLS

Figure 1.7 – Control Panel Main Regions



1.3.1 System Controls & Fault LEDs

	Ident	Description
1	Outstation Select Buttons	Buttons used for selecting outstations and answering incoming calls
2	Outstation Icons	Show the type and status of outstations Icons flash to indicate incoming calls
3	System Status & Fault Indications	Power On: System is supplied with power (mains or battery) System: A system fault is present (Latching) General: System is in fault Fuse: Rupture of internal fuse or loss of mains Charger: Charger Malfunction Batt Low: Battery is discharged or disconnected Batt High Resistance: Battery internal resistance or connection >200mR
4	Fault Controls	Lamp Test: Press to test all LEDs and Fault Buzzer Fault Accept: Press to silence fault buzzer Reset (recessed): Reset latched faults
5	Broadcast Button	Press to make a live announcement to all Type A & C (Fire Telephone) and any occupied Type B (DRS Outstation)
6	Call answer and hold buttons	Press to place the currently selected outstation into and out of hold Press to call / stop calling selected Type A or C (Fire telephones)
7	Navigation Controls	Enter: Acknowledge dialogues Up / Down: Move between tabs Left / Right: Move between pages
8	User Interface Tabs	Shows the currently selected tab, tab types: Outstations: Status of all outstations, outstations can be selected to call (Type A & C only) Calls: Incoming call ordered list of any calling outstations Events: Event log Live Faults: Displays current faults Fault Log: Displays fault log
9	Page indication	Shows the current page if more data is present

1.3.2 Internal “Reset” Button

The Reset button is used for a variety of different operations, however most of these activities are normally only performed when Testing or Commissioning the system.

The button is mounted internally to prevent accidental or inadvertent use.

1.3.3 Control Panel Configuration DIP Switches

OmniCALL control panels can be fitted with up to 4 Line Card (1 x built in, 3 x expansion slots for OCLC). Each Line Card is configured using corresponding internal DIP switches.

There are 4 banks of DIP switches labelled "LCRD1 ON BRD", "LCARD2", "LCARD3" & "LCARD4".

DIP switch function is shown in the table below

Ident	Description
LP/RADIAL	Configure Line Card for Loop (Max 32 outstations) or Radial Connections (Max 4 outstations)
RAD 1 EN	Radial use only, enable output 1
RAD 2 EN	Radial use only, enable output 2
RAD 3 EN	Radial use only, enable output 3
RAD 4 EN	Radial use only, enable output 4

DIP switches must be set before commissioning can be started.

1.3.4 Control Panel Volume Adjustments

There are 2 internal volume adjustments;

Ident	Description
EARPIECE VOL	Adjusts the level of the red handset ear piece
SPKR VOL	Adjust the volume of the onboard speaker (Incoming Call Ringer Volume)

1.3.5 Control Panel USB connection

OmniCALL control panels are supplied with a USB C connector for configuration and commissioning

2 Overview of System Design Requirements

This section assists the system designer to define the system layout, the type and conductor size of the cabling, and the interconnections between equipment.

2.1 SYSTEM LAYOUT & CABLE LENGTHS

The OmniCALL EVC System utilises either a 2-wire plus screen ring circuit to allow continued operation in the event of a cable break or individual 2-wire plus screen radial connections.

Polarity of the 2-wire connections is not important.

Outstations are connected to Line Cards configured for either loop or radial operation. OmniCALL control panels are delivered with one line card (ONBRD), a further 3 OCLC lines cards can be fitted to the LINE CARD 2, 3 & 4 expansion sockets.

The maximum OmniCALL Loop length is dependent on the number of remotes and the cable type used please see table below;

# Remotes units per Ring	4	8	12	16	20	24	28	32
Max Ring Length (metres) using 1.5mm cable	1400	1400	1100	850	700	575	500	450
Max Ring Length (metres) using 2.5mm cable	1400	1400	1400	1400	1100	950	800	700

Care must also be taken if there are any long connecting spans of cable (e.g. to the first or last remote).

For more information about OmniCALL loop design please contact Baldwin Boxall requesting the "OmniCALL Loop Calculator" spreadsheet.

The maximum cable length for radial connections is defined on a per Line Card basis.

Each line card can support up to 1.4KM of radial connections shared across the 4 possible radial outputs.

2.2 CABLE SELECTION

*The ring circuit must be cabled in a 2-core with screen **enhanced** fire rated cable.* Soft skin type is recommended.

The conductor cross-sectional area must be chosen depending on the length of cable runs and the number of Remote Units on each circuit. There are also requirements within BS5839 part 1 that determine cable types and diameters.

Please contact the Baldwin Boxall Technical Sales team on +44(0)1892 664422 for free advice and assistance with cabling design and choice of cable.

2.3 CABLING INSTRUCTIONS

The auto-commissioning feature numbers all the Outstations consecutively one line card at a time.

Starting with the ONBRD Line Card outstations will be numbered either;

- Loop Configured: Starting with the first outstation connected to the LOOP OUT connection and then counting clockwise around the loop ending at the LOOP IN connection.
- Radially Connected: Starting with RAD 1, then RAD 2 (if enabled), then RAD 3 (if enabled) and then RAD 4 (if enabled).

Once all outstations are commissioned on a Line Card the sequence continues with the next Line Card in the following order ONBRD, LINE CARD 2, LINE CARD 3, LINE CARD 4.



NOTE: If DTAKITS or Assistance Call systems are connected to Outstations then they are detected and assigned the appropriate icon during the commissioning sequence in the following order, Remote 1, DTA connected to Remote 1 (if enabled), Remote 2, DTA connected to Remote 2 (if enabled) etc.

2.4 BATTERY SIZE CALCULATION

Battery capacity is normally calculated based on the initial outstation design/loading.

If additional outstations are added at a later date please contact Baldwin Boxall to perform battery calculations. This will ensure suitable batteries with sufficient capacity are used to maintain compliance with BS5839-9.

For more information about OmniCALL battery calculation please contact Baldwin Boxall requesting the "OmniCALL Battery Calculator" spreadsheet.

3 Hardware Installation

This chapter describes how to install back boxes, terminate the cabling and connect the Remote Units, and how to mount the OmniCALL EVC System Control Panels.

It is assumed that the cable runs have already been installed according to the System Designer's specification.

**CAUTION**

If the installation requires cutting or drilling of enclosures during the installation process then Baldwin Boxall equipment must be suitably protected to prevent contamination.

The internal components and modules are not protected against the ingress of swarf or other conductive contaminants.

The equipment may be damaged if it is exposed to such conductive materials.

**CAUTION**

Ensure all power is removed from the OmniCALL EVC System Control Panels before attempting any electrical connections or component installation.

Failure to do this may result in system damage that will not be covered by Baldwin Boxall's warranty terms.

3.1 INSTALLING THE REMOTE UNITS

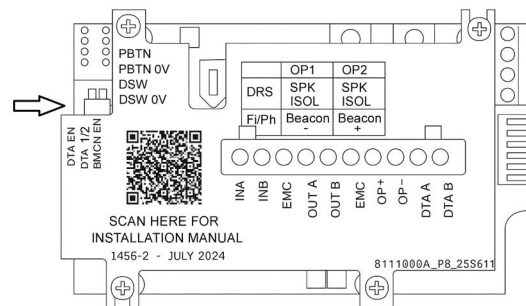
3.1.1 Pre-Installation Remote Configuration

3.1.1.1 DTA / Assistance Call & External Beacon / Speaker Isolation Relay configuration

Before installation DIP switches need to set on the remote units in order to configure Assistance Call / DTA & Beacon / Speaker Isolation options;

These DIP switches are located as shown below;

Figure 3.1 – Remote DIP Switch Location



Configurations settings are shown in the below table;

Ident	Description
DTA EN	Switch to On to enable the DTA / Assistance call input
DTA 1/2	Select 1 or 2 DTA / Assistance call kits connected (reports as 1 location) at the Master Panel
BMON	Enable the operation and monitoring of either an external beacon (Type A and Type C outstation) or external speaker isolation relay (Type B Outstation)

There are also DIP switch settings located underneath the Top Cover PCB which are used to configure the outstation type. These are set by default on all devices except combined units where they will need to be changed before installation. The DIP switch settings for all outstation types are shown below for reference;

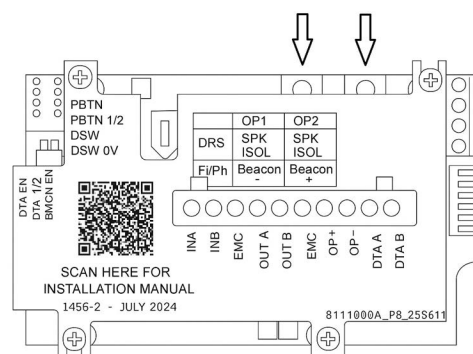
	S1	S2	S3	S4	P1	P2
Refuge	Off	Off	Off	Off	Off	On
Fire Phone	On	Off	Off	Off	Off	On
Advanced	Off	On	Off	Off	Off	On
Combined	On	On	Off	Off	Off	On
Steward	Off	Off	On	Off	Off	On
Combined Steward	On	Off	On	Off	Off	On
DTA Interface	Off	On	Off	On	Off	On

3.1.1.2 Remote volume controls

Each remote assembly is fitted with 2 user accessible volume controls, SPKR VOL for the inbuilt loudspeaker (ringer on Type A, ringer and speech on Type B and Type C) and HSET VOL for the telephone handset earpiece.

These volume controls are located as shown below;

Figure 3.2 – volume controls



3.1.2 Remote Unit Connection Details

The connection details for the remote units are the same for all remote types.

3.1.2.1 Remote Unit Loop Connection Details

Connections details for Loop Connected remote units can be found below;

Ident	Description
IN A	Connect to Control Panel RAD1 LOOP OUT A or preceding remote OUT A
IN B	Connect to Control Panel RAD1 LOOP OUT B or preceding remote unit OUT B
EMC	Shield Connection (connected to faceplate)
OUT A	Connect to Control Panel RAD 4 LOOP IN A or next remote IN A
OUT B	Connect to Control Panel RAD 4 LOOP IN B or next remote IN B
EMC	Shield Connection (connected to faceplate)
OP+	Beacon or Speaker Isolation Relay +ve
OP-	Beacon or Speaker Isolation Relay +ve
DTA A	See DTAKIT installation manual for connection details
DTA B	See DTAKIT installation manual for connection details

3.1.2.2 Remote Unit Radial Connection Details

Connections details for Loop Connected remote units can be found below;

Ident	Description
IN A	Connect to Control Panel RAD1,2,3,4 A
IN B	Connect to Control Panel RAD1,2,3,4 B
EMC	Shield Connection (connected to faceplate)
OUT A	NC
OUT B	NC
EMC	Shield Connection (connected to faceplate)
OP+	Beacon or Speaker Isolation Relay +ve
OP-	Beacon or Speaker Isolation Relay +ve
DTA A	See DTAKIT installation manual for connection details
DTA B	See DTAKIT installation manual for connection details

3.1.3 Installation

3.1.3.1 Type B Disabled Refuge (OCBRG)

Back Boxes Types

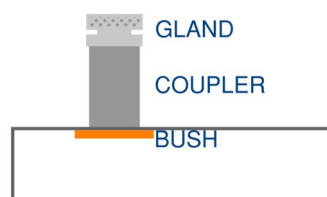
There are 4 options for back-boxes;

1. OCBRG-BB - Surface back box
2. OCBRG-PBFR - Fire Rated Plaster Board back box
3. OCBRG-BBIP - Weather proof surface enclosure for OCBRG
4. In wall galvanised back box (supplied by others), if this option is used it is important that the following parameters are met
 - Minimum 47mm depth
 - Cable knock outs towards the rear of the box

Back Box Installation

Baldwin Boxall recommend that for all the above back box options conduit should be installed using a 20 or 25mm Male bush inside the back box connected to an external 20 or 25mm coupler located on the outside. This arrangement is shown in the diagram below;

Figure 3.3 – conduit installation



This is to maximise the available space inside the back box and will ensure that the remote front plate fits correctly.



CAUTION

Installing conduit or cable glands using any other method may result in not enough space inside the back box which could result in undue cable pressure or not enough room to install the face plate.

Remote Unit Cable Termination



CAUTION

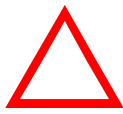
The OmniCALL EVC System Remote Units can be damaged due to incorrect cable termination. Care should be taken to ensure all connections are terminated correctly

1. Remove the outer insulation (Red) as close as possible to where the cable enters the back box.
2. Green & Yellow sleeve the incoming shield connections and terminate to the back box and the EMC connections on the supplied 10 way pluggable terminal block connector.
3. Terminate the remaining connections to the 10 way pluggable terminal block connector.
4. Push all cabling to the rear of the back box.

5. Position the 10 way pluggable terminal block connector in roughly the correct position for connection to the front plate.

Remote Unit Faceplate Installation

1. Offer the remote unit faceplate to the remote.
2. Connect the 10 way pluggable terminal block connector to the remote unit faceplate electronics.
3. Carefully attached the remote unit faceplate to the back box using the supplied screws.

**CAUTION**

Ensure no trapped cables or excessive pressure on the electronic assemblies when installing OmniCALL EVC System Remote Unit faceplates.

3.1.3.2 Type A Emergency Telephone (OCAFRP)

Back Box Installation

If a Flush Mounting Bezel is to be used this should be installed to the back box before the back box is fitted.

Remote Unit Cable Termination

**CAUTION**

The OmniCALL EVC System Remote Units can be damaged due to incorrect cable termination. Care should be taken to ensure all connections are terminated correctly

1. Remove the outer insulation (Red) as close as possible to where the cable enters the back box.
2. Green & Yellow sleeve the incoming shield connections and terminate to the EMC connections on the supplied 10 way pluggable terminal block connector.
3. Terminate the remaining connections to the 10 way pluggable terminal block connector.
4. Push all cabling to the rear of the back box.

5. Position the 10 way pluggable terminal block connector in roughly the correct position for connection to the electronics enclosure.

Electronics Enclosure & Phone Installation

1. Check the Configuration DIP switches for DTA EN, DTA1/2 and BMON EN.
2. Check the S1-S4 and P1, P1 DIP switches are set as follows
 - S1 - On, P2 On
 - S2, S3, S4, P1 Off
3. Fit the Electronics Assembly Cover PCB using the 4 x M3x6 screws provided
4. Offer the Electronics Enclosure to the Back Box.
5. Connect the 10 way pluggable terminal block connector to the remote unit faceplate electronics.
6. Carefully attach the electronics enclosure to the back box using the supplied screws and locking nut.



CAUTION

Care should be taken to ensure there are no trapped cables or excessive pressure on electronic assemblies when the Electronics Enclosure is installed.

3.1.3.3 Type C Combined Remote (OCCCRP)

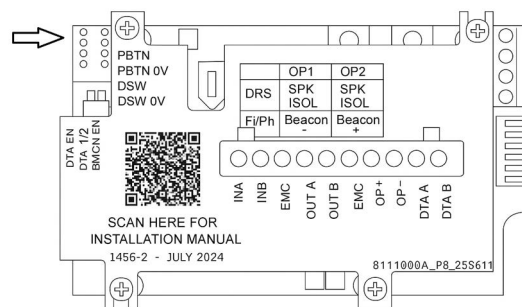
The installation for Type C Combined Remotes is similar to the installation of Type A Emergency Telephones except an additional connection is required during the Electronics Enclosure & Phone Installation.

Electronics Enclosure, Phone and Refuge Call Switch Installation

1. Check the Configuration DIP switches for DTA EN, DTA1/2 and BMON EN.
2. Check the S1-S4 and P1, P1 DIP switches are set as follows
 - S1 - On, S2 - On, P2 On

- S3, S4, P1 Off
3. Fit the Electronics Assembly Cover PCB using the 4 x M3x6 screws provided
 4. Offer the Electronics Enclosure to the Back Box.
 5. Connect the 2 wires from the refuge call button to the electronics assembly PBTN and PBTN 0V terminations.

Figure 3.4 – Refuge Call Button Connection



6. Connect the 10 way pluggable terminal block connector to the remote unit faceplate electronics.
7. Carefully attach the electronics enclosure to the back box using the supplied screws and locking nut.



CAUTION

Care should be taken to ensure there are no trapped cables or excessive pressure on electronic assemblies when the Electronics Enclosure is installed.

3.1.3.4 Retrofit & Custom Kits

Options are available for retro fit kits to utilise existing back boxes from other equipment.

Some of these back boxes utilise a Termination Board PCB to connect to the site cabling.

In order to aid installation a new OmniCALL compatible termination PCB will be supplied which will need to be fitted and the site cabling terminated too.

The connection details for the Termination PCB are the same as the connection details on the Electronics Assembly.



NOTE: Termination PCBs are designed to mimic the original design as far as possible in order to limit the amount of site cable re-work required during installation.

3.2 INSTALLING THE CONTROL PANEL(S)

The OmniCALL EVC System Control Panels should be installed in BS5839-9 compliant locations.

3.2.1 Flush Mounting

If the optional flush mounting bezel is to be used it should be installed before mounting the OmniCALL EVC System Control Panel.

3.2.2 Mounting the Control Panel

The OmniCALL EVC System Control Panels can weigh up to 33KG (when installed with 33Ah batteries). It must be installed using suitable fixings to a suitable load bearing structure using the 2 x Key Slots and 2 x mounting holes provided in the rear of the enclosure.

3.2.3 Mains Connection

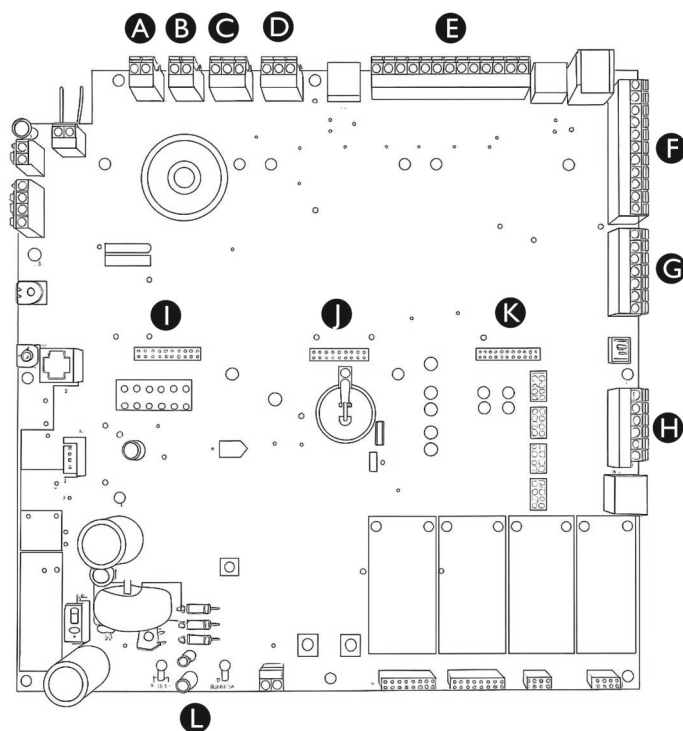
The incoming mains connection should be connected to the integral fuse terminal block which is located on the right hand side of the Phone Enclosure.

Suitable means should be provided external to the OmniCALL EVC System Control Panels to allow for safe isolation of the incoming mains supply.

The OmniCALL EVC System Control Panels must be connected to a suitable Safety Earth Connection.

3.2.4 Control Panel Connections

Figure 3.5 — Internal Connections



Ident	Description
A	Fire Panel Input EOL
B	Fire Panel Input (9-36V) - Energise to enable Type B remotes Input Configured via USB PC Connection
C	Delayed Call Output Output Configured via USB PC Connection
D	Fault Output
E	Line Card (ONBRD)
F	Future Use
G	Future Use
H	Future Use
I	Line Card Expansion Connector (LCARD2)
J	Line Card Expansion Connector (LCARD3)
K	Line Card Expansion Connector (LCARD4)
L	Battery Connections

3.2.5 Loop / Radial Remote Connection Details

Loop and Radial Remote connections are terminated to Line Cards installed within the OmniCALL EVC System Control panels.



CAUTION

Before terminating loop or radial connections ensure there are no electrical short circuits between any A&B connections.

Failure to do this may result in system damage that will not be covered by Baldwin Boxall's warranty terms.

3.2.5.1 Loop Connections

The table below shows the connection details for Loop Connections;

Line Card Ident	Description
RAD1 LOOP OUT A	Loop Out A Connection
RAD 1 LOOP OUT B	Loop Out B Connection
RAD 2 A	Not Used
RAD 2 B	Not Used
RAD 3 A	Not Used
RAD 3 B	Not Used
RAD 4 LOOP IN A	Loop In A Connection
RAD 4 LOOP IN B	Loop In B Connection

3.2.5.2 Radial Connections

The table below shows the connection details for Radial Connections;

Line Card Ident	Description
RAD1 LOOP OUT A	Outstation 1 A Connection
RAD1 LOOP OUT B	Outstation 1 B Connection
RAD 2 A	Outstation 2 A Connection
RAD 2 B	Outstation 2 B Connection
RAD 3 A	Outstation 3 A Connection
RAD 3 B	Outstation 3 B Connection
RAD 4 LOOP IN A	Outstation 4 A Connection
RAD 4 LOOP IN B	Outstation 4 B Connection

3.2.6 Additional Line Card Installation

OmniCALL EVC System Control Panels are supplied with one Line Card connector (OBNBRD) built into the main PCB.

Up to 3 additional line cards can be fitted to add additional loop or radial connections as required.

Line card installation procedure;

1. Carefully insert the OCLC Line Card into the Line Card 2,3,4 connectors on the main PCB. Take care to ensure the Line Card is correctly lined up with the connector
2. Secure the line card to the mounting pillars with the supplied screws

3.2.7 Fire Panel Input

OmniCALL EVC System Control Panels can be connected to a Fire Detection and Alarm System in order to disable Type B Refuge Remotes in non-emergency situations.

When this feature is enabled any Calls initiated at Type B or Type C (Refuge Call Button only) are inhibited and the user will hear "System In Standby" from the remote loudspeaker.

Fire and Emergency Telephones are not effected by this input.

The Fire Panel Input can accept a voltage of 9–36V.

There is a separate connector available for connecting a suitable EOL resistor (fire panel specific value) to enable monitoring of the connection between the Fire Panel CIE and the OmniCALL Control panel.

3.2.8 Fault Relay Connection

OmniCALL EVC System Control Panels offer a Fault output connection to signal any faults to other systems (e.g. a Fire System).

The Fault relay is energised in the HEALTHY state.

The NO/NC indication on the PCB indicates the FAULT state.

3.2.9 Delayed Call Relay Connection

OmniCALL EVC System Control Panels offer a Call output connection to signal incoming calls to other systems.

By default this output is disabled and can be set to operate the relay 1–150 seconds after an incoming call is received by the control panel.

The NO/NC indication on the PCB indicates the NO CALL state.

4 Testing & Commissioning

The Commissioning Procedure must be followed:

- At first installation to enable the OmniCALL EVC System to “learn” about the system configuration,
- If a Remote Unit has been added, removed or replaced in an existing system.

4.1 OVERVIEW OF THE COMMISSIONING PROCEDURE

A brief description of the Commissioning Procedure is as follows:

- Check all incoming Loop and Radial connections for short circuits using a multimeter,
- Configure DIP switches on all remote units for Assistance Call / DTA & Beacon / Speaker Isolation options,
- Configure Line Card Loop / Radial DIP switches inside the Control Panel,

- Connect Mains,
- Connect Batteries,
- Connect a PC via USB and run the commissioning procedure,
- Set the remote names using the PC,
- Test the system (all locations).

4.2 INITIAL SITE WIRING CHECK

All OmniCALL Control Panel Line Card Outputs are protected against short circuits, however damage can occur if the site cabling is repeatedly shorted.

Before any site cabling is connected to the control panel the A&B connections should be checked to ensure there are no short circuits (less than 100K).

4.3 REMOTE CONFIGURATION DIP SWITCHES

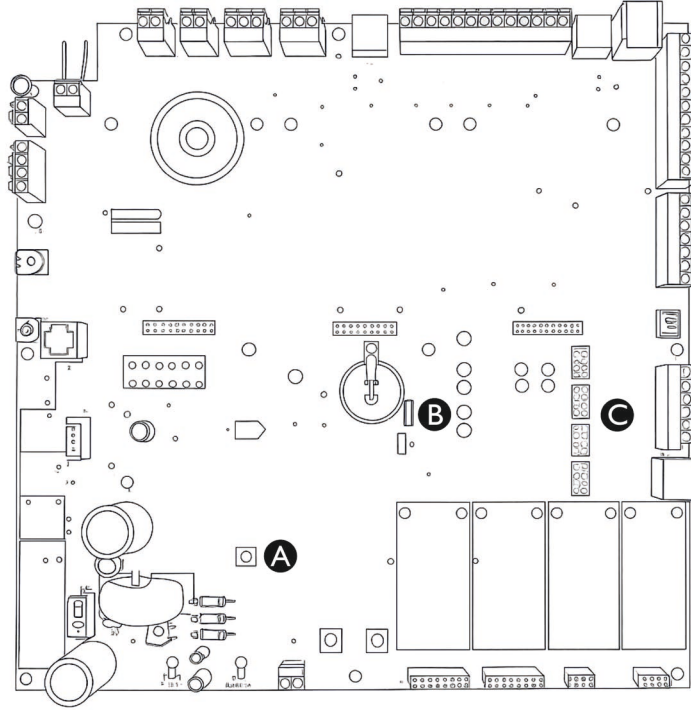
During the commissioning process the DIP switch settings for configuring DTA / Assistance Call connections and Beacon / Speaker Line Isolation Relays are read by the system. Therefore it is important that these options are set at each remote before the commissioning procedure.

4.4 CONTROL PANEL DIP SWITCH SETTINGS, INTERNAL RESET & USB PORT

OmniCALL Line Cards are configurable for either Loop or Radial Operation. If configured as Radial individual lines can be enabled and disabled.

The OmniCALL Control Panel Line Card configuration DIP Switches, commissioning USB port and internal Reset button are shown in the diagram below;

Figure 4.1 — Line Card Configuration DIP Switches and Internal Reset



Ident	Description
A	Internal Reset Switch
B	Comissioning USB Port
C	Line Card Configuration DIP Switches

The presence of line cards is detected during the start-up of the Control Panel.

OmniCALL Control Panels have an internal USB C connector which is used to start the commissioning process and once complete set names for remotes.

4.5 PC CONNECTION

4.5.1 USB Connection

In order to begin the commissioning process and enter a name for each remote a PC must be connected to the OmniCALL control panel internal USB C port.

Once connected the PC will enumerate the OmniCALL Control Panel as a USB COM Port (there is no USB driver install required, OmniCALL Control Panels enumerate using the built in USB Serial Port Driver on Windows 10 and Windows 11)

In order to obtain the COM Port number allocated please look in the PC's device manager under Ports (COM and LPT).

4.5.2 Commissioning Software

In order to access the OmniCALL Control Panel Commissioning and Settings menu a Serial Terminal Program is required.

The COM Port Settings are 115200 BAUD, 8 Data Bits, 1 Stop Bit, No Parity.

Any standard Serial Terminal is compatible (e.g. Hyper-term, Putty etc.) and Baldwin Boxall have a simple Terminal emulator "OmniCFG" available for download if required.

The Serial Terminal is operated via the PC keyboard.

4.5.3 Serial Terminal Menu Structure

The top level menu structure of the OmniCALL system is shown below and each is described in the following sections.

Ident	Description
1	Settings
2	Commission System
3	Read Logs
4	Clear Logs
5	Device Names
6	Set Date & Time

In order to access a menu option press the corresponding item number on the PC keyboard and press enter.

To return from a menu press enter without entering anything.

4.5.3.1 Settings Menu

The settings menu has 4 sub menus;

1. Init config - Once a setting is changed via the Edit config option it must be initialised either via a console reset or by selecting the Init Config menu option.
2. Edit Config - There are 2 configurable functions
 1. Incoming Call Delay - Used to disable or set the time before the Delayed Call Relay operates after the Control Panel receives an incoming call
 2. Fire Panel Input - Enable / Disable the Fire Panel input connection. When enabled Type B outstations (including the Type B element of Type C outstations) will play "System in Standby" and calling is prohibited until the Fire Panel input is energised.
3. Disp Config - This menu item will print out the current configuration of the system

4. Erase Config – This menu item will set the Control Panel to Factory defaults (not including names data).

4.5.3.2 Commission System Menu

This menu option is used to start the OmniCALL Control Panel Commissioning Sequence.



CAUTION

Starting the commissioning sequence will remove the ID's from all field devices. For this reason the user needs to confirm this action via a submenu.

Auto Commissioning

The auto-commissioning feature numbers all the Outstations consecutively one line card at a time and allocates a remote ID starting at "0000" and a default name of "Outstation 0000".

Starting with the ONBRD Line Card outstations will be numbered either;

- Loop Configured: Starting with the first outstation connected to the LOOP OUT connection and then counting clockwise around the loop ending at the LOOP IN connection.
- Radially Connected: Starting with RAD 1, then RAD 2 (if enabled), then RAD 3 (if enabled) and then RAD 4 (if enabled).

Once all outstations are commissioned on a Line Card the sequence continues with the next Line Card in the following order ONBRD, LINE CARD 2, LINE CARD 3, LINE CARD 4.



NOTE: If DTAKITS or Assistance Call systems are connected to Outstations then they are detected and assigned the appropriate icon during the commissioning sequence in the following order, Remote 1, DTA connected to Remote 1 (if enabled), Remote 2, DTA connected to Remote 2 (if enabled) etc.

During the commissioning sequence all of the outstations found are displayed in order along with;

- Their allocated ID (starting at 0)
- Connection details (e.g Linecard 1, Relay 3)
- DTA Options (1 or 2 DTA Kits enabled)

Once the auto-commissioning feature is complete icons representing all the discovered field devices (and connected DTA / Assistance call kits) will be shown on the OmniCALL Control Panel Display "Outstations" Tab. This should be checked to ensure all expected outstations have been found.

Once the auto-commissioning feature is complete it is recommended that the PC application is closed, USB is disconnected and a system reboot is performed via the internal "Reset" button.

4.5.3.3 Read Logs Menu

This menu option allows access to the stored Time Stamped Fault and Event Logs.

4.5.3.4 Clear Logs Menu

This menu options allows stored Fault and Event logs to be cleared.

4.5.3.5 Device Names Menu

This menu is used to set names and locations for all Outstations connected to the OmniCALL Control Panel.

Each outstation in the OmniCALL System can be identified with a 15 character name and a 12 character location e.g. Name: Floor 1 Refuge, Location: North Stair.

The menu structure is shown below;

1. Info - This menu option list the number of outstations that have had names changed from Default (e.g. "Name: Outstation XXXX, Location "----").

2. Page - This menu options allows a subset of the names storage to be accessed. A page contains the names and locations of 10 outstations.
3. Get - This menu option allows the user to view the Name and Location fields for a single outstation based on its ID.
4. Set - This menu option is used to set the name fields for a given outstation.

When selected the user is asked to enter the outstation ID which is allocated during the commissioning process. They are then prompted to enter a name and a location. If a field is not required (e.g. name only, no location a " " should be entered for that field.
5. Clear - Resets all stored name information to default (e.g. Name: "Outstation XXXX", Location: "---").
6. All - Lists the name and location information stored for all Commissioned outstations.

4.5.3.6 Set Date & Time Menu

The OmniCALL Control Panel includes a Battery Backed (CR2032 located on the main PCB) Real Time Clock which is used to display the current date and time on the main display and time stamp the stored fault and activity logs.

This menu options allows the date and time to be set.

4.6 PREVENTING BATTERY FAILURE DUE TO DEEP DISCHARGE



CAUTION

If mains power is to be removed from the system for an extended period the batteries should be disconnected.

The batteries will be damaged if they are left in a discharged state for an extended period.

4.7 FUNCTIONAL TESTING REMOTE UNITS

4.7.1 Introduction

Remote Units can only be functionally tested after the Control Panel has successfully completed the Commissioning Process.



NOTE: To perform functional testing on Remote Units it will be necessary to activate the Fire Panel input on the Control Panel if configured

4.7.2 Disabled Refuge Remotes (OCBRG / OCBARG)

1. Ensure the remote LED is flashing green, and press the "CALL" button.
Ensure the LED changes to solid green.
2. Both the Remote Unit and the Control Panel(s) will 'ring'.
The associated icon on the Control Panel(s) will flash red to indicate activity at that Remote Unit location.

Press the associated Outstation Select button on the control panel to answer the call. The icon on the control panel will change to flashing green and the remote LED will change to orange to indicate a call is in progress.

3. Set the Volume on the Remote Unit.
The volume control sets the level of Control Panel speech (and the level of the ring tone) reproduced at the Remote Unit and should be adjusted to allow speech to be clearly understood.
4. De-occupy the unit pressing and holding the remote CALL button until an audible beep is heard. Ensure both the remote LED returns to flashing green and the control panel icon returns to normal.

4.7.3 Fire Telephones (OCAFRP)

1. Check the remote LED is flashing.
2. Open the door & lift the Handset at the Remote Unit.
Both the Remote Unit and the Control Panel will 'ring'. The associated icon on the Control Panel will flash red to indicate activity at that Remote Unit location.
3. Check that when the Handset at the Control Panel is lifted and the outstation is selected communication can be established.
4. Set the Volume on the Remote Unit.
There are 2 volume adjustments at the remote unit, one changes the level of the ringing indication (when a remote is called from the control panel) and the other changes the level of the red handset ear piece
5. Replace the Handset on the Remote Unit & close the door.
Ensure the relevant indication on the Control Panel returns to normal.
6. Lift the handset on the Control Panel, select the relevant outstation and press the "off hook" button.
Ensure the Remote Unit starts to ring.



NOTE: If a Beacon is fitted to the Remote Unit then it should flash while the unit is being called from the Control Panel.

7. Press the control panel "on hook" button and ensure the outstation icon returns to normal.

4.7.4 Combined Remote (OCCCRP)

The refuge section and fire telephone section of the Combined remote operate in the same way as refuge and fire telephone remotes.

When calling the icon displayed at the Control Panel changes to show if the call originated from the fire telephone or the refuge remote section.

4.7.4.1 Disabled Refuge section of BVOCC

Refer to Section 4.7.2 for functional testing of the Disabled Refuge sub-assembly.



NOTE: The spkr volume control is shared by the Disabled Refuge (speech) and the Fire Telephone (ringer) and is adjusted while testing the Fire Telephone.

4.7.4.2 Fire Telephone section of BVOCC

Refer to Section 4.7.3 for functional testing of the Fire Telephone sub-assembly.

4.7.5 Disabled Toilet Alarm (DTAKIT)

1. Pull the Ceiling Pull Cord to activate the Toilet Alarm.
2. Ensure the Local Alarm is activated and that the Over Door Light illuminates.
3. Ensure the relevant icon on the Control Panel flashes to indicate the Alarm.

4. Press the relevant outstation select button on the Control Panel.
Ensure the icon on the Control Panel changes to flashing green, and the Local Alarm & Over Door Light now flash intermittently to indicate "Help Acknowledge".
5. Press the "RESET" button on the Toilet Alarm to cancel the alarm and extinguish the Over Door Light.
Ensure the icon on the Control Panel returns to normal.

5 Fault Finding

5.1 CONTROL PANEL FAULT INDICATION

The OmniCALL Control Panel is capable of detecting and indicating a wide variety of faults.

The fault indications are made up of several elements;

- Date and Time
- Fault Originator (e.g. "Outstation XXXX", "1st Flr Refuge" or "Console XXX")
- Fault Detected

Using the above an Engineer should easily identify any reported issues and perform rectification works as required.

A complete list of the Faults that can be detected can be found below;

Fault	Description
Loop In S/C	Loop short circuit detected by outstation
Loop Out S/C	Loop short circuit detected by outstation
DTA O/C	DTAKIT open circuit detected by outstation
DTA S/C	DTAKIT short circuit detected by outstation
Beacon O/C	Beacon open circuit detected by outstation
Beacon S/C	Beacon short circuit detected by outstation
Mic O/C	Red Handset Microphone short circuit detected by outstation or control panel
Mic S/C	Red Handset Microphone short circuit detected by outstation or control panel
Earpiece O/C	Red Handset Earpiece open circuit detected by outstation or control panel
Earpiece S/C	Red Handset Earpiece open circuit detected by outstation or control panel
RTC Low Batt	Real time clock battery (CR2032) detected as low by control panel
Batt Low V	Backup battery <20V detected by console
Batt High Temp	Backup battery temperature >40C detected by console
Batt Low Temp	Backup battery temperature <-5C detected by control panel
Batt High Z	Backup battery internal resistance >200mR detected by control panel
Mains / Fuse	Mains loss or internal fuse blow detected by control panel
Charger	Backup Battery Charger failure detected by control panel
LP Out Comms	Loss of communication with outstation via LP Out. When this fault is detected the LP In connection is energised to attempt to re-establish comms. This fault is latching and will require a reset to clear.
LP In/Out Comms	Total loss of communication with outstation
RAD Comms	Loss of comms with outstation connected via Radial
LC PSU	Line Card PSU Hardware Failure
LC PSU OP	No voltage detected when LC Relay energised (likely short circuit)
LP In PSU	No voltage detected at LP In, likely open circuit loop
4G	Future Use
System Boot	System has restarted

Fault	Description
WDT_UNDERFLOW_RST	System has restarted
WDT_REFRESH_RST	System has restarted
ROM_CRC	Firmware CRC Fault
CON_CRC_SETUP	Configuration CRC fault
CON_CRC_CODEC	Configuration CRC fault
CON_CRC_SYSTEM	Configuration CRC fault
CON_CRC_DEVICES	Configuration CRC fault
CON_CRC_NAMES	Configuration CRC fault
System Change	Control Panel configuration has been changed since last auto-commission operation performed (e.g. Line Card DIP switches changed).

5.2 FAULT RESET

Some faults are self resetting (e.g. Red Handset microphone faults) and are automatically removed once the fault condition is rectified.

Some faults are latching (e.g. Restart faults) and require a manual fault reset operation to clear.

To reset a latched fault use the recessed "RESET" pin hole on the front panel of the Control Panel.

6 Maintenance

The OmniCALL EVC System System has been designed to meet the requirements of BS5839-9:2021, however the standard also provides recommendations for Maintenance and routine testing of the system that should be performed by the user.

The following sections of this Manual briefly describe the relevant requirements of BS5839-9:2021.

6.1 ROUTINE TESTING

6.1.1 Daily Check – Fault Indicators

If the OmniCALL EVC System Control Panel is located in a position where the audible fault warning could be unnoticed for more than 24 hours, a special check should be performed each day to confirm that the “General” LED is not illuminated, or any faults that are indicated are receiving necessary attention.



NOTE: This Check only needs to be performed if the Warning Buzzer may go unheard for 24 hours. This inspection does not need to be recorded.

6.1.2 Weekly Functional Test

Each week, a functional test of a Remote Unit should be performed to ensure it can make and receive clear and intelligible calls to the relevant Control Panel.

A different Remote Unit should be used each week, so that all units will get tested in rotation.



NOTE: The result of this weekly test and the identity of the Remote Unit used should be recorded.

6.1.3 Six Monthly Inspection by a “Competent Person”

The Standard recommends that every six months the System should be thoroughly inspected to ensure continued reliability.

The “Competent Person” must have suitable knowledge and equipment to be able to check the system.

Baldwin Boxall can perform these Inspections under a Service Agreement.



NOTE: The result of this inspection and any outstanding defects will be reported to the “Responsible Person”. These should be recorded.
