

BALDWIN BOX▲LL

BVRD Series Microphones

Installation Instructions

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This equipment has been designed and manufactured to conform to the following EC Standards:

EMC: EN55103-1 Environment Classification: E1,

EMC: EN55103-2 Environment Classification: E5,

Safety: EN60065

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

A "Declaration of Conformity" statement to the above standards and a list of auxiliary equipment used for compliance verification is available on request.

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AMENDMENT RECORD

Page Number(s) Affected	Change Note Number	Nature of Amendment	Date of Amendment
All	DPI53	Issue 1	Oct 2009
All	ECR2308	Issue 2: BMS8 Changes	April 2010
All	ECR2448	Issue 3: Add Active Indicator & Re-scan Procedure	Nov 2010

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SAFETY INFORMATION

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

Voltages in excess of 30 Volts RMS or 50 Volts DC are considered Hazardous and in certain circumstances can be lethal.

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.

This Manual contains Warnings, Cautions and Notes.

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



WARNING

Before attempting to remove this component, ensure the Mains Power Supply and Battery Backup have been disconnected.

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



CAUTION

Notice must be taken of all cautions.
If a Caution is ignored the equipment may be damaged.



CAUTION: ELECTRO-STATIC SENSITIVE DEVICES

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

Notes are statements that are useful to the user in the context of a particular section of the manual, e.g.



NOTE: Do not speak into the microphone until the "Speak Now" LED is illuminated.

COMMENTS

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

I Introduction

The BVRD Series Microphones have been designed to provide a wide variety of features suitable for any installation.

Figure 1.1 — Typical BVRD8 Microphone



The Microphones are configured during commissioning via an internal USB port and communicate with the main control system via an RS485 serial data link. A standard RJ45 Network cable connection (carrying both Audio and Serial Data) is employed, considerably reducing the on-site cabling requirements.

I.1 THE BVRD SERIES MICROPHONES RANGE

The range of BVRD microphones include the following types:

Name	No. of Zones
BVRD8	8
BVRD16	16
BVRD24	24
BVRD32	32

Microphones with more than 32 zones are available to order.

I.2 MICROPHONE OPTIONS & FEATURES

All microphones in the BVRD Series include the following features as standard:

- Fully monitored microphone, speech and data paths
- Ergonomic design with all buttons and displays mounted behind a stylish overlay
- Performs as a Paging microphone (with emergency options disabled) and as a Fire microphone only when the keyswitch is turned
- 50 x 30mm LCD Displays showing zone names & status
- “Speak Now” indicator to show the user when a pre-announcement chime has finished
- Simple bar graph display shows the user the current speaking volume to ensure a clear announcement is made
- Ability to select from up to 30 messages
- Zone programmable volume adjustment
- Fault indicators for Microphone, Serial Data, Processor, Processor Restart, and Common fault
- Voice alarm system Active indicator
- Five programmable function keys
- Option to add emergency “All Call” bypass facility

I.3 TECHNICAL SPECIFICATION

Audio	
Nominal Output Level	+10dBm
Max Output (limiter operating)	+18dBm
Output Impedance	8 Ohms
Frequency Response (-3dB)	200Hz - 12KHz
Power Requirement (24V DC)	
BVRD8	35mA Standby (130mA Max)
BVRD16	35mA Standby (180mA Max)
BVRD24	35mA Standby (230mA Max)
BVRD32	35mA Standby (280mA Max)
Serial Data Link (See note below)	
RS485	Type 0 Protocol, 9600 Baud, 8 bit, Even Parity, 1 Stop Bit
Dimensions (W x H x D)	
BVRD8	205mm x 48mm x 177mm
BVRD16	275mm x 48mm x 177mm
BVRD24	345mm x 48mm x 177mm
BVRD32	415mm x 48mm x 177mm
Flush Mount Bezel Dimensions (W x H)	
BVRD8	220mm x 200mm
BVRD16	290mm x 200mm
BVRD24	360mm x 200mm
BVRD32	430mm x 200mm
Bezel Cutout Dimensions (W x H)	
BVRD8	188mm x 182mm
BVRD16	258mm x 182mm
BVRD24	328mm x 182mm
BVRD32	398mm x 182mm



NOTE: The RS485 Protocol is configured during the commissioning process, the default values are shown above.

2 Installation

2.1 BMS8 TERMINATION BOX

All microphones use a single RJ45 (CAT5 network) connection, which is usually terminated to a local wall mounted BMS8 Termination box.

Figure 2.1 — Typical BMS8 Termination Box



CAUTION

The BMS8 Termination Box has a standard RJ45 socket to allow use of a standard CAT5 network cable to connect to the microphone.

Care must be taken to ensure this socket is not used for any other equipment since it may be damaged if connected.

2.2 CABLE IDENTIFICATION

The colour codes of the RJ45 conductors are as follows:

Function	Pin #	Cable Colour
+V DC	1	Orange / White
0V	2 & 8	Orange & Brown
Data "A"	3	Green / White
Audio	4	Blue
Audio	5	Blue / White
Data "B"	6	Green
Bypass	7	Brown / White (Not used by default)



CAUTION

Do not connect Pin 7 (Brown / White) to +24V.

2.2.1 Colour Code for Processor Bypass switch

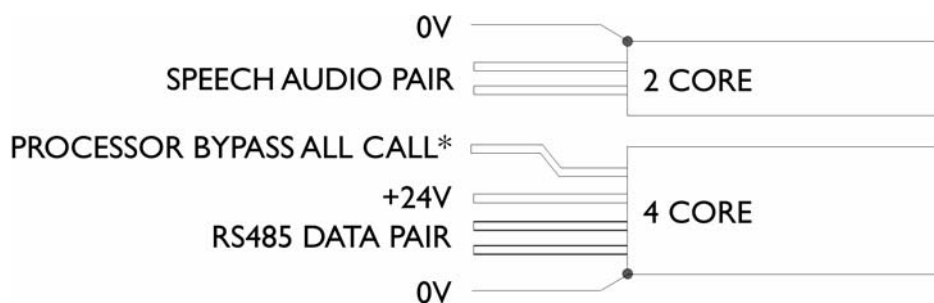
The colour code for units with a Bypass switch fitted are as shown above, the Bypass Access using Pin 7 (Brown / White).

2.3 RECOMMENDED CABLE TYPES

The BVRD Series Microphones should be terminated to 2 x 4 core Fire Rated cable (MICC/ FP200 or similar).

It is strongly recommended that separate cables be used for the audio pair to eliminate potential interference from the RS485 data.

Figure 2.2 — Suggested Cable Connections



* The Processor Bypass is only used on BVRD Microphones fitted with a "Processor Bypass All Call" button.

3 Firmware Configuration

3.1 INTRODUCTION

It is necessary to configure the BVRD microphone prior to use.

This configuration includes setting system specific options such as communication protocols, naming the inputs and outputs, DVA message selection and setting up button allocation.

To access the USB socket on the BVRD Microphone remove the two screws securing the Right Hand side-panel, then carefully remove the side-panel.

Figure 3.1 — BVRD USB Socket for configuration



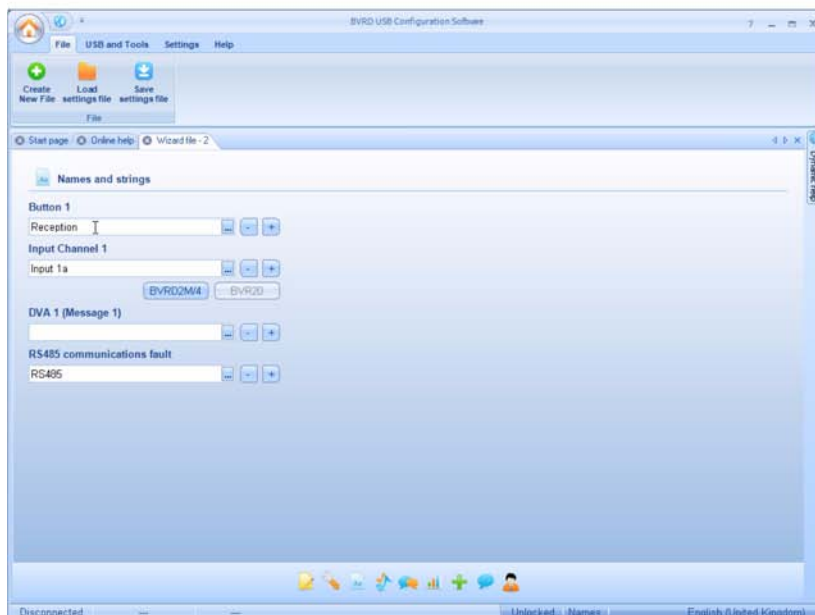
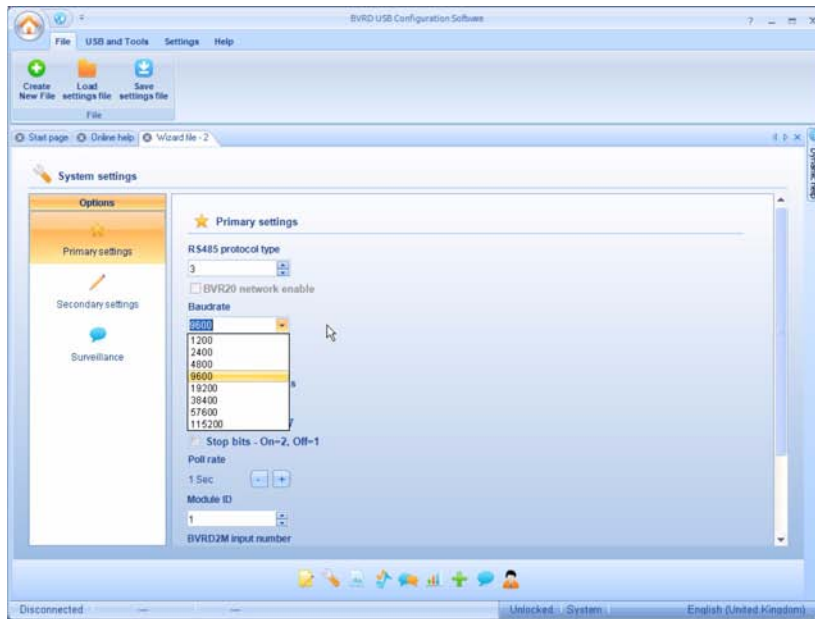
NOTE: The BVRD Microphone must be powered from a 24V DC supply via the RJ45 connector before configuration is possible.

3.2 BVRD USB CONFIG SOFTWARE

Install the “BVRD USB Configuration Software”.

The software includes comprehensive on-line help that explains how to correctly configure the unit to suit the installation.

Figure 3.2 — Typical Pages from BVRD USB Configuration Software



3.3 LOADING “DEFAULT” VALUES

To load the default settings (shown in Table 3.1) the following procedure should be used:

1. Remove the RJ45 lead,
2. Turn the keyswitch 45° to Emergency position,
3. Press and hold the “Speak” button,
4. Re-connect the RJ45 lead while holding the “Speak” button,
5. Unit will show a confirmation to load Factory Default settings.

Default configuration values will then be loaded into the unit.

Table 3.1 — Default Factory Settings

Variable	Default Setting
I/D or Input #	Physical Input # 2
RS485 Protocol	Type 0
RS485 Baud Rate	9600
Selection Latch	Off
Stop Bit	1
Data Bits	8
Parity	Even
Surv Frequency	20kHz
Poll Rate	1 second
Max BVR ID	0
Retransmission constant	3
Speak Now Delay	1 Second
BGM Sources	Channels 17, 18, 19, 20
Surv Atten	-10dB
Level 1 Indicator	-10dB
ACO Line Fault	Global (non zonal) ACO Fault return
BVR Device Surveillance	All Surveillance options Enabled
Volume Settings	Set to OFF
Button Groups	All set to OFF
Function Keys	All set to OFF



NOTE: These Factory Default settings will enable a BVRD Microphone to address upto 16 outputs using physical input #2, with a BVRD2M using a "Default" configuration file.

3.4 TEMPORARY “BUZZER MUTE”

To temporarily silence the fault buzzer use the following procedure:

1. Disconnect the RJ45 network cable.
2. Turn the “Emergency Mode” Keyswitch 45°, and press and hold the DVA message “HOME” button.
3. Reconnect the RJ45 cable (to reconnect power).
4. Press the “HOME” button until the “OK” LED illuminates.
5. Release the “HOME” button.



NOTE: The buzzer will remain muted until the RJ45 cable is disconnected or power removed. While the Buzzer is muted the "OK" LED will be permanently illuminated,

3.5 CLEARING “LATCHED” LINE FAULTS

The BVRD Series Microphones can be configured to “Latch” line faults. If a Line Fault is detected by the system, the microphone can be set to keep displaying the fault even after the fault has been cleared. This is normally used as a Fault Finding Aid.

To clear Latched faults press and hold the “FAULT ACCEPT” button, then press and release the “AUX SELECT” button. Release both buttons and the latched faults should be cleared.

3.6 FAULT FINDING: RE-SCAN PROCEDURE

If the LCD Displays do not show the correct (or any) zone information then perform the following procedure:

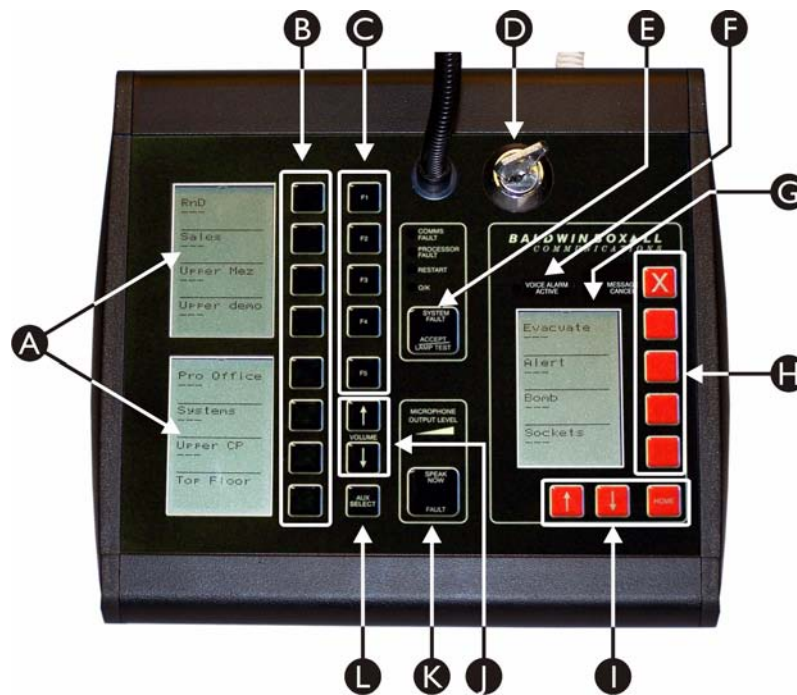
This forces a rescan to detect the correct number of zone buttons.

1. Turn the “Emergency Mode” Keyswitch 45°, and press and hold the DVA message “HOME” button.
2. Press and release the “Fault Accept” button.
3. Release the “Home” button and turn off the keyswitch.

4 Operating Instructions

4.1 CONTROLS & INDICATORS

Figure 4.1 — BVRD Microphone Front Panel Controls & Indicators



A	Zone Status LCD Displays	G	Message Status LCD Display
B	Zone Select Buttons	H	Message Selection Buttons
C	Function Buttons (F1 - F5)	I	Message Navigation Buttons
D	Emergency Mode Keyswitch	J	Volume Control Buttons
E	Fault Accept / Lamp Test Button	K	"Speak" (Press to Talk) Button
F	Voice Alarm Active Indicator	L	AUX Select (BGM) Button

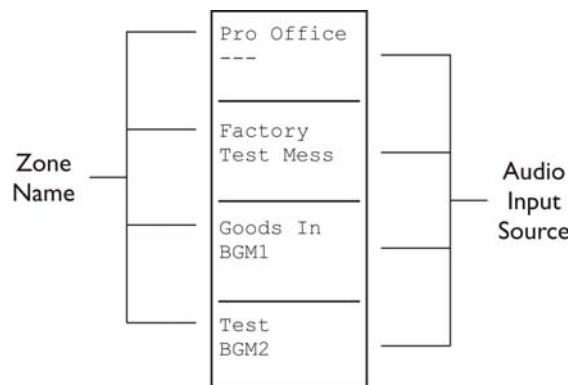
4.2 VIEWING THE CURRENT STATUS OF THE SYSTEM

4.2.1 Zone Status LCD Displays

The Zone Status LCD Displays (Item A in Figure 4.1) show the name of the zone, what is currently being broadcast by the zone and also if any faults are present on that zone.

This allows the operator to easily determine the current status of the system.

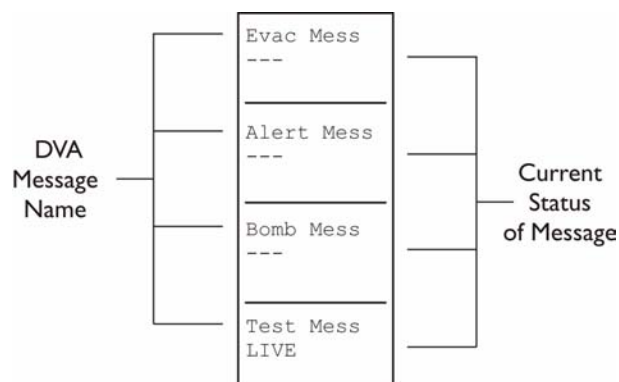
Figure 4.2 — Typical Zone LCD Display



4.2.2 Message Status LCD Display

The Zone Status LCD Display (Item F in Figure 4.1) shows the names of the Messages, if they are currently being broadcast and also if any faults are present.

Figure 4.3 — Typical Message LCD Display



4.3 IN “PAGING” MODE (KEYSWITCH NOT TURNED)

4.3.1 To make an “All Call” Paging Announcement

1. Press the “SPEAK” button (Item “J” in Figure 4.1) and wait for the “SPEAK NOW” Indicator to illuminate.
2. Speak slowly and clearly, ensuring the “MAX” indicator does not illuminate.
3. When the announcement is finished, release the “SPEAK” Button.

4.3.2 To make a Paging Announcement to Selected Zones

1. Select the required zones using the “Zone Select Buttons” (Item “B” in Figure 4.1).
The zone status displays will show “Selected” for the relevant zones.
2. Press the “SPEAK” button (Item “J” in Figure 4.1) and wait for the “SPEAK NOW” Indicator to illuminate.
The zone status displays will show the BVRD microphone as the source for the relevant zones.
3. Speak slowly and clearly, ensuring the “MAX” indicator does not illuminate.
4. When the announcement is finished, release the “SPEAK” Button.

4.3.3 To Broadcast BGM (Background Music) to selected zones

1. Select the required zones using the “Zone Select Buttons” (Item “B” in Figure 4.1).
The zone status displays will show “Selected” for the relevant zones.
2. Press the “AUX SELECT” button until the required source is displayed in the zone status displays.
3. Press the “SPEAK” button to confirm the selection.

4.3.4 To Cancel BGM (Background Music) to selected zones

1. Select the required zones using the “Zone Select Buttons” (Item “B” in Figure 4.1).
The zone status displays will show “Selected” for the relevant zones.
2. Press the “AUX SELECT” button until “CANCEL” is displayed in the zone status displays.
3. Press the “SPEAK” button to confirm cancellation.

4.3.5 Emergency (DVA) Messages in Paging Mode

It is not possible to select Emergency (DVA) Messages in Paging Mode i.e. without the keyswitch turned 45°.

This prevents accidental or unauthorised DVA Message broadcast.

4.4 IN “EMERGENCY” MODE (KEYSWITCH TURNED 45°)



NOTE: In Emergency Mode, Live Announcements will normally override DVA message(s) that are currently being broadcast, however this depends on the priority settings within the BVRD2M configuration.

4.4.1 To make an “All Call” Emergency Live Announcement

1. Press the “SPEAK” button (Item “J” in Figure 4.1) and wait for the “SPEAK NOW” Indicator to illuminate.
2. Speak slowly and clearly, ensuring the “MAX” indicator does not illuminate.
3. When the announcement is finished, release the “SPEAK” Button.

4.4.2 To make an Emergency Announcement to Selected Zones

1. Select the required zones using the “Zone Select Buttons” (Item “B” in Figure 4.1).
The zone status displays will show “Selected” for the relevant zones.
2. Press the “SPEAK” button (Item “J” in Figure 4.1) and wait for the “SPEAK NOW” Indicator to illuminate.
The zone status displays will show the BVRD microphone as the source for the relevant zones.
3. Speak slowly and clearly, ensuring the “MAX” indicator does not illuminate.
4. When the announcement is finished, release the “SPEAK” Button.

4.4.3 To Play a DVA Message to All Zones

1. Press the Zone Selection button configured for “Select All” or press every Zone Selection Button (Item B in Figure 4.1), or press the relevant Function Button (Item C in Figure 4.1).
2. Press the required message selection button (Item G in Figure 4.1), using Message Navigation buttons (Item H in Figure 4.1) to find the message if required.
3. The Message will be broadcast to all zones and zone status displays will show the selected DVA Message as the source.

4.4.4 To Cancel a DVA Message to All Zones

1. Press the Zone Selection button configured for “Select All” or press every Zone Selection Button (Item B in Figure 4.1), or press the relevant Function Button (Item C in Figure 4.1).
2. Press the “Message Cancel” button (Item G in Figure 4.1).

4.4.5 To Play a DVA Message to Selected Zones

1. Press the Zone Selection button (Item B in Figure 4.1) for the required zones.
2. Press the required message selection button (Item G in Figure 4.1).
3. The Message will be broadcast to the selected zones and the zone status displays will show the selected DVA Message.

4.4.6 To Cancel DVA Messages to Selected Zones

1. Press the Zone Selection button (Item B in Figure 4.1) for the required zones.
2. Press the “Message Cancel” button (Item G in Figure 4.1).



NOTE: It is possible to cancel different DVA Messages at the same time.

4.5 FAULT REPORTING

4.5.1 Common / System Faults



NOTE: The specific level of Fault Reporting on the BVRD Microphone is set during Configuration.

If a fault is reported on the system the common “SYSTEM FAULT” Indicator will flash and the internal buzzer will sound.

To Accept the Fault and silence the buzzer, press the “ACCEPT / LAMP TEST” button.

If the fault is detected on one of the output zones (such as an Amplifier or Loudspeaker Line Fault) a Fault may be indicated on the relevant Zone’s LCD Display, however this depends on the Fault Reporting configuration settings.

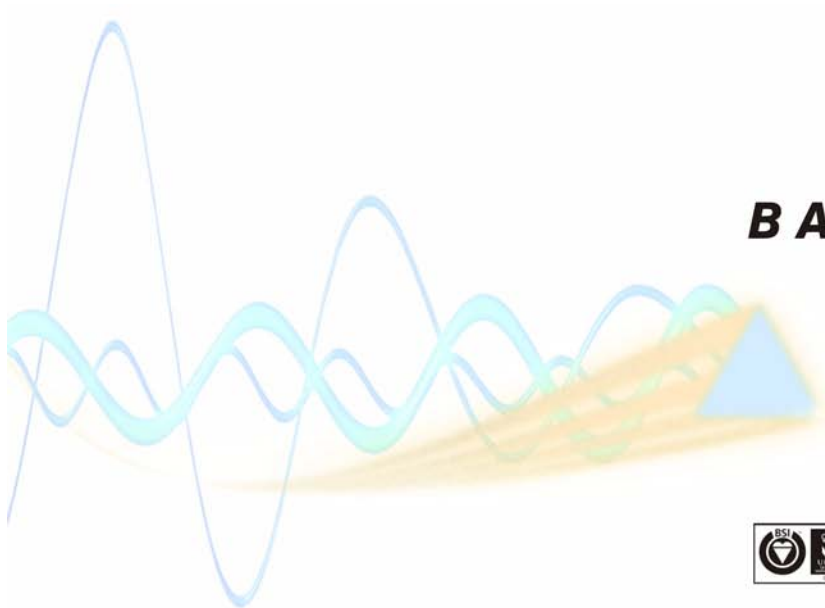
Depending on the nature of the fault it could prevent an announcement from being broadcast to the affected zone.

Remedial action should be taken as soon as possible to correct faults as they impair the correct operation of the system.

4.5.2 BVRD Series Microphones Fault Indicators

The BVRD Series Microphones include three fault indicators to show the following faults:

- “COMMS FAULT”: The BVRD Microphone cannot communicate with the system via RS485 data. The only function that will operate is the Emergency “ALL CALL” bypass, if fitted.
- “PROCESSOR FAULT”: The BVRD Microphone has suffered a processor fault and is not operating correctly. The only function that will operate is the Emergency “ALL CALL” bypass, if fitted.
- “RESTART”: The Processor has restarted since power has been applied. This will appear when first switched on and can be reset by pressing the “ACCEPT/LAMP TEST” button.



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