

IBVRDALI
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Issue 1
ECR N/A

BVRDALI / P1 / P2

Utilising Firmware V1-01

Installation Instructions



Baldwin Boxall Communications Ltd.
Wealden Industrial Estate, Farningham Road
Crowborough, East Sussex, TN6 2JR

Telephone: 01892 664422

Fax: 01892 663146

Website: www.baldwinboxall.co.uk

Email: mail@baldwinboxall.co.uk

BALDWIN BOXALL
COMMUNICATIONS

BVRDALI / P1 / P2

The BVRDALI is a dual channel Audio Loop Isolator for use with de-centralised VA Systems.

The BVRDALIP1 includes a +20dBm Low Impedance balanced line amplifier module. The module amplifies a standard balanced line audio output (approx -10dBm to 0dBm) to +20dBm to enable the signal to be broadcast over a long (5 kilometres max) audio loop. The BVRDALIP1 also injects and monitors a DC voltage on the loop to ensure continuity.

The amplifier and audio loop are electrically isolated from ground to enable continued operation if a short to ground occurs, and if a short to ground is detected a fault will be announced by the BVRDALIP1.

The modules monitor the audio loop and will detect either an Open Circuit or Short Circuit span of loop cabling.

In both cases the Master module will announce a fault, and in the case of a Short Circuit span the units adjacent to the faulty cables will automatically isolate the affected span to enable the continued operation of the system.

The BVRDALI modules are DIN Rail mounting and are designed to be fitted within, and powered from, the local equipment rack.

The BVRDALIP2 is similar to the BVRDALIP1 except there are two +20dBm Line Amplifier modules fitted.

Method of Surveillance – Loop Continuity

The Master unit (BVRDALIP1 or P2) injects a DC signal around the loop and monitors the return voltage. If the return voltage is not present the unit will announce a fault and broadcast the audio and DC signal from both the Line IN and Line OUT ports.

When in this fault condition, periodically the Master unit will check for the return voltage. If the correct return voltage is detected the unit will automatically clear the fault.

Method of Surveillance – Short Circuit Detection

When a short circuit is detected (due to the lack of DC signal) a fault is announced and all relays operate on the Master and satellite modules to isolate all spans of cable.

The Master unit will check both ports (IN and OUT) and if successful the relays will be released and the DC signal and audio will be broadcast from both ports.

The satellite units check their ports and if conditions are correct the relays will release. The span of cable with the short circuit will be identified and remain isolated.

Once the short circuit is removed the units will detect the DC signal. The relevant units will release their relays and the faults will be cleared.

Jumper Settings

BVRDALI without line Drivers fitted: JP1, JP2, JP3, JP4 fitted

BVRDALIP1 Line Driver fitted on Line 1: JP3, JP4, JP7 fitted

BVRDALIP1 Line Driver fitted on Line 2: JP1, JP2, JP6 fitted

BVRDALIP2 Both Line Drivers fitted: JP6, JP7 fitted.

Fault Indicators

Fault outputs are NPN open collector 40V @ 10mA max.

BVRDALI (without Line Driver modules fitted):

Fault outputs will conduct if there is a DC signal on both the IN and OUT ports.
Fault 1 applies to Line 1 and Fault 2 applies to Line 2.

BVRDALIP1 & P2 (Line Driver modules fitted):

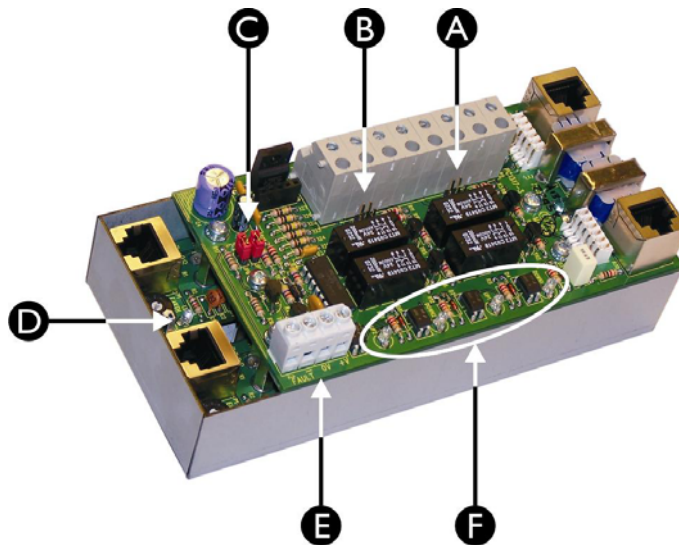
Fault outputs conduct if there is loop continuity with the audio being broadcast from the IN port and monitored on the OUT port.
Fault 1 applies to Line 1 and Fault 2 applies to Line 2.

Note: If one Line Driver module is fitted the “other” loop operates as a BVRDALI.

A fault will be announced if a Short to Ground is discovered and the Yellow LED on the amplifier module will illuminate.

Red LEDs are fitted that will illuminate when there is a signal on the relevant port.

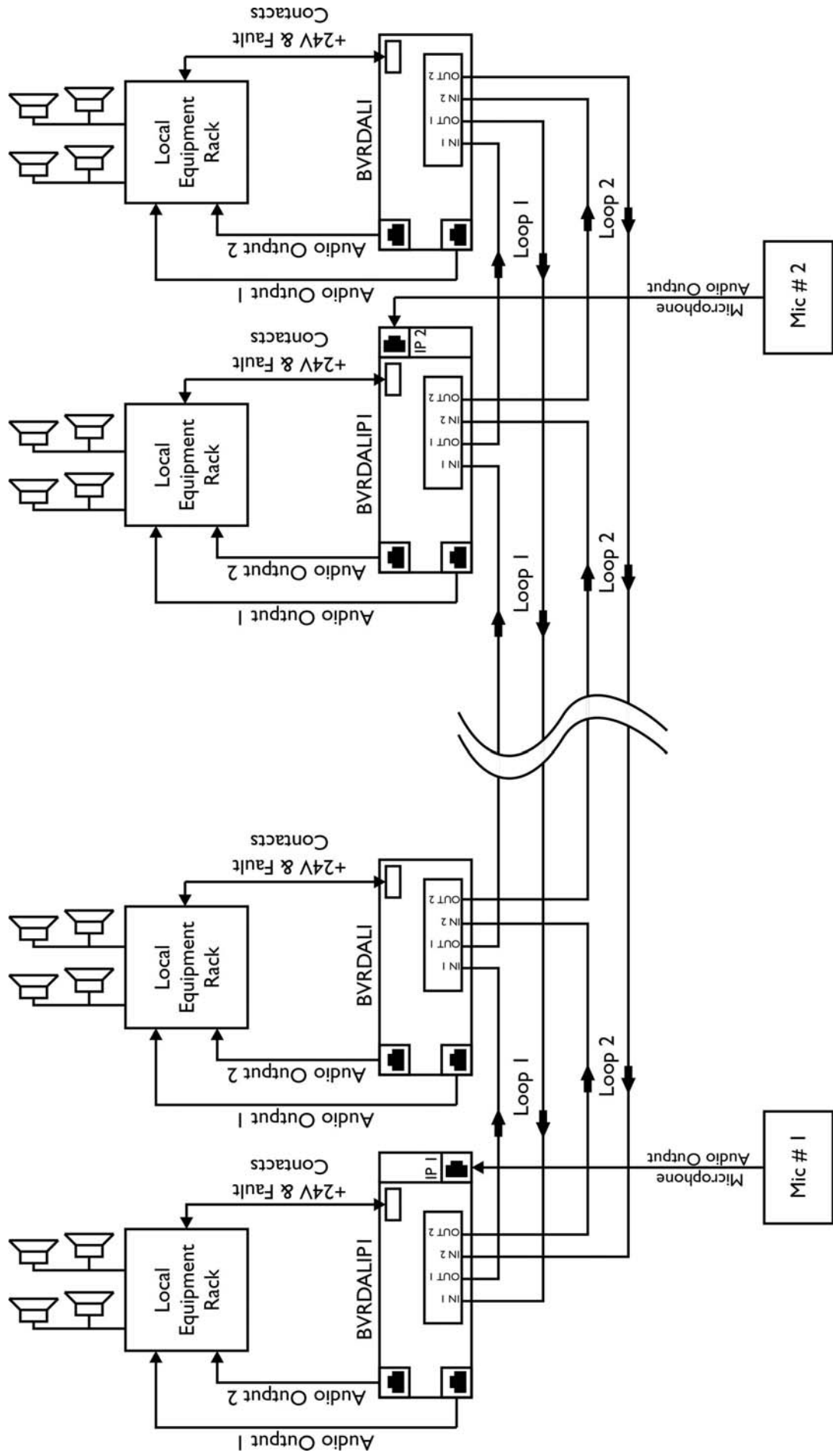
Jumpers, Settings & Indicators



Ident	Description
A	JP1 & JP2
B	JP3 & JP4
C	JP6 & JP7
D	Yellow “Earth Fault” LED
E	+24V DC & Fault connections
F	Red “Signal present” LEDs

Current Consumption (in non-fault conditions)

BVRDALI (without Line Driver Modules fitted): 10mA
 BVRDALIP1 (One Line Driver Module fitted): 100mA
 BVRDALIP2 (Two Line Driver modules fitted): 200mA



Typical Installation example showing BVRDALI Audio Isolation Modules