

Contents

1	Introduction	2
2	Installation	4
2.1	Signal I/O	5
3	Configuration	8
3.1	Setting input options	8
3.2	Selecting single or dual mode	9
4	Status monitoring	10
5	Trouble shooting	12
6	Specification	14

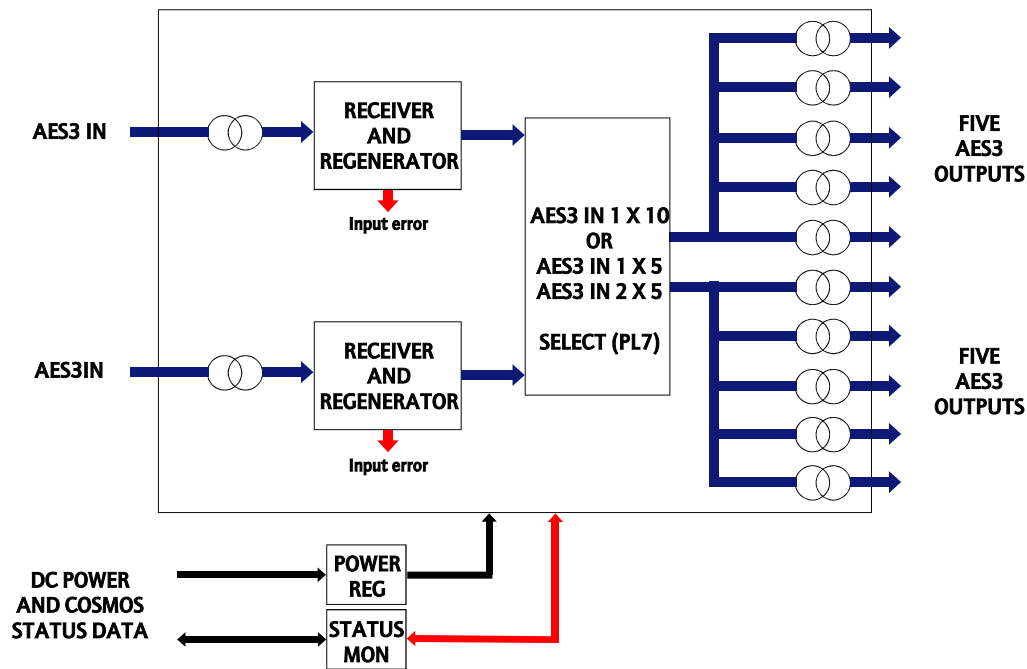
1 Introduction

The 4402 digital audio dual distribution amplifier (DA) operates as a one input ten output DA or two one input five output DAs.

The module may be used in the 1050 3U and 1051 1U ICON modular product rackframes with a choice of balanced or unbalanced rear connectors.

Characteristics of the 4402 are:

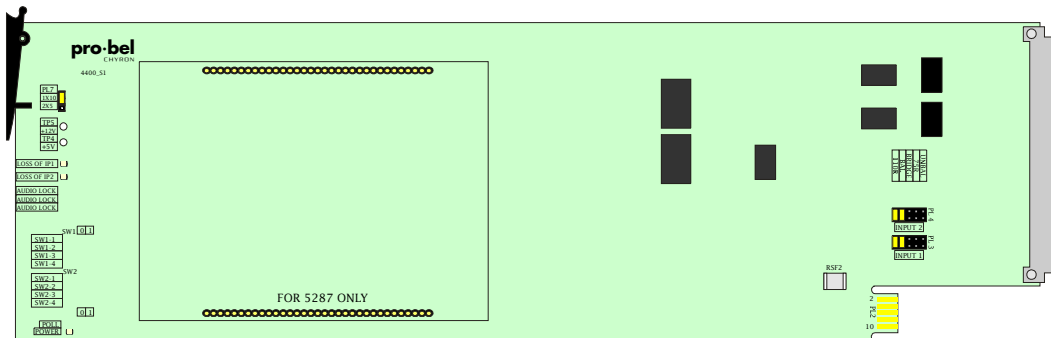
- two transformer coupled digital audio inputs
- 110 Ω balanced, 75 Ω unbalanced or high impedance
- ten outputs, unbalanced capacitively coupled or balanced transformer coupled
- single (1x10) or dual (2x5) modes
- compatible with Pro-Bel COSMOS status monitoring



The 4402 digital audio dual distribution amplifier

2 Installation

The 4402 digital audio dual DA fits in the 1050 3U and 1051 1U ICON modular product rackframes. It is used with either the K4402.2B 20mm rear panel for a balanced digital audio input or the K4402.3U 30mm rear panel for unbalanced digital audio I/O.

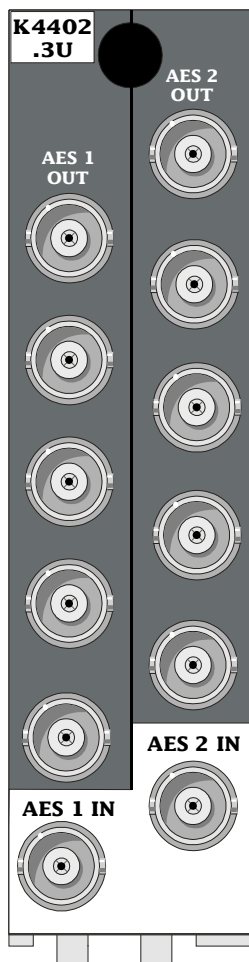


The 4402 digital audio dual DA

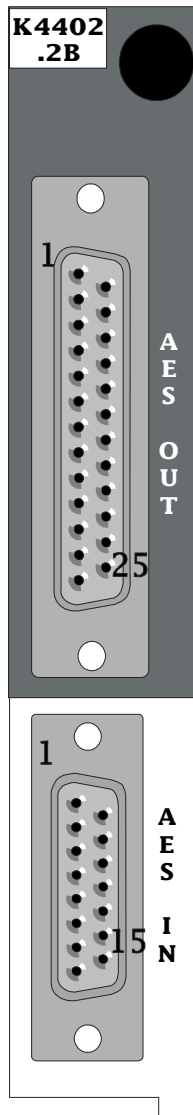
For module and rear connector installation please refer to the appropriate ICON rackframe section of the manual.

2.1 Signal I/O

The K4402.3U panel is equipped with BNC connectors for unbalanced digital audio inputs and outputs, whilst the K4402.2B panel is equipped with 15 way and 25 way 'D' type connectors to accommodate balanced digital audio inputs and outputs.



The K4402.3U rear panel for unbalanced I/O



The K4402.2B rear panel for balanced AES I/O

Signal I/O (AES OUT)			
Pin	Function	Pin	Function
1	O/P1-	14	OP6-
2	O/P1+	15	OP6+
3	GND	16	GND
4	O/P2-	17	O/P7-
5	O/P2+	18	O/P7+
6	O/P3-	19	O/P8-
7	O/P3+	20	O/P8+
8	GND	21	O/P9-
9	O/P4-	22	O/P9+
10	O/P4+	23	GND
11	GND	24	O/P10-
12	O/P5-	25	O/P10+
13	O/P5+		

Signal I/O (AES IN)			
Pin	Function	Pin	Function
1	N/C	9	N/C
2	GND	10	N/C
3	N/C	11	GND
4	N/C	12	N/C
5	GND	13	I/P1 +
6	I/P1 -	14	GND
7	I/P2+	15	I/P2-
8	GND		

Note: in dual mode (PL7 2x5), outputs 1 to 5 are fed from input 1 and outputs 6 to 10 are fed from input 2. In single mode (PL7 1x10) input 1 feeds all ten outputs.

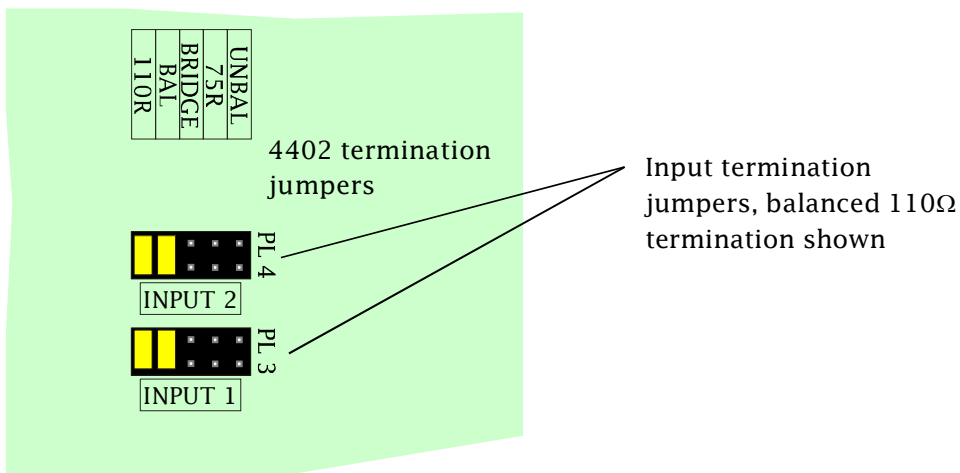
3 Configuration

The 4402 inputs may be configured for different termination values to increase system flexibility.

3.1 Setting input options

To select the AES input termination options use jumpers PL3 and PL4 as explained in the following table:

AES input termination modes	
PL3/4 settings	Description
UNBAL	Use with unbalanced input
75R	Use with unbalanced input to terminate signal with 75 Ω
BRIDGE	Selects high impedance termination (Hi-Z)
BAL	Use with balanced input
110R	Use with balanced inputs to terminate signal with 110Ω

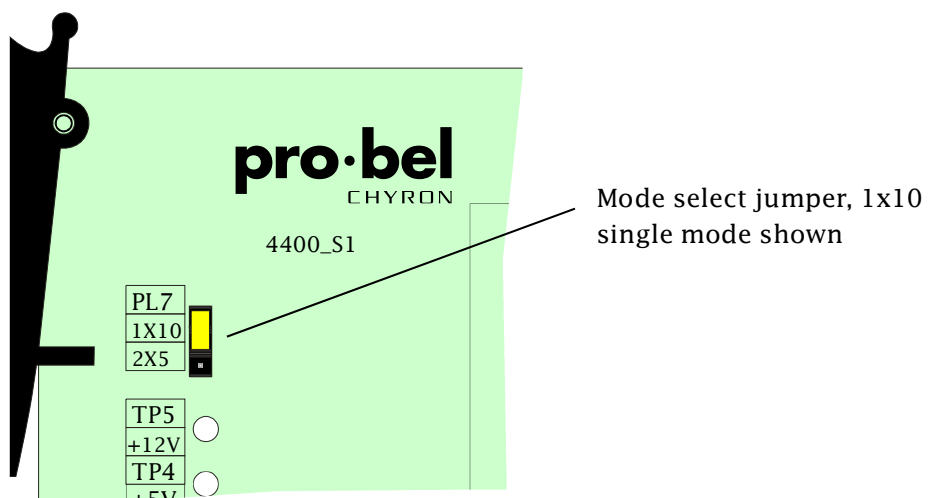


3.2 Selecting single or dual mode

The 4402 digital audio distribution amplifier may be operated in single mode where all ten outputs are fed from input 1 or dual mode where the module effectively becomes two, 5 output DAs. In dual mode input 1 feeds outputs 1 to 5 and input 2 feeds outputs 6 to 10.

The mode select jumper PL7 is near the edge of the card.

Mode select jumper	
PL7	Mode
1x10	Single mode - Input 1 drives all ten outputs
2x5	Dual mode - Input 1 drives outputs 1 to 5 and Input 2 drives outputs 6 to 10



4 Status monitoring

The status monitoring circuit will provide the following information to the status monitoring controller:

- module present
- input 1 present
- input 2 present
- power OK

In addition, the module is programmed with the following information, which can be read by the status monitoring controller:

- Module type
- Module bar code
- Module issue no

For further details of the Pro-Bel status monitoring system please refer to the COSMOS status monitoring manual.

5 Trouble shooting

The green card edge POWER LED is not lit

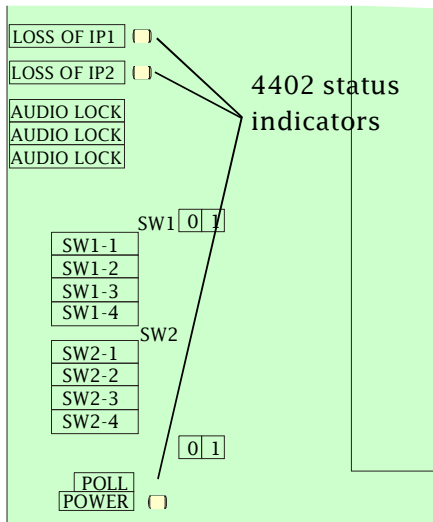
- check the PSU indicator to confirm that there is power to the frame
- check the resettable fuses protecting the card - do this by removing the power to the card for about 30 seconds then restoring the power
- if necessary, refer to the power supply trouble shooting guide in the appropriate ICON rackframe manual section

There are no output signals

- ensure that the green power LED on the front of the main card is lit
- ensure that a valid input is present and that the appropriate red loss of input1 or input 2 LED is not lit
- check that the appropriate mode, single or dual has been selected

The output signal seems corrupted or low level

- check that the input signal is a valid AES 3 digital audio signal
- check that the appropriate terminations have been set



4402 status indicators	
LED label	Meaning when lit
LOSS OF INPUT 1	Lights red to show that no input is detected
LOSS OF INPUT 2	Lights red to show that no input is detected
POWER	Lights green if all voltage rails present

6 Specification

Inputs

Number and type:	2, transformer coupled, balanced to AES3-1992 or unbalanced to AES3id (or SPDIF)
Termination:	High, 75Ω or 110Ω
Sample frequency range	32-54kHz

Outputs

Number and type:	10, balanced transformer coupled AES3-1992 or ten unbalanced capacitively coupled to AES3id
Impedance	110Ω balanced or 75Ω unbalanced

Temperature range

Operating:	0° to +40°C
Storage:	-10°C to +70°C