VIPEDIA-12 Products

Professional Sound Life-Safety Digital Audio System

Installation Guide

This product is designed and manufactured to comply with the following EC Directives for electrical and electronic equipment:

1) Restriction of Hazardous Substances (RoHS) Directive: 2011/65/EU & 2015/863/EU

2) Electromagnetic Compatibility (EMC) Directive: 2014/30/EU

3) Low Voltage (LVD) Directive: 2014/35/EU

A "Declaration of Conformity" statement to the above Directives, listing the applicable harmonised standards to which the equipment conforms, is available on request.

This product is assessed for safety as suitable for pollution degree 2 environments.

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

This product must be disposed of in accordance with the WEEE directive and local legislation.

Please refer to ASL downloads page for latest revisions of all user documentation.

www.asl-control.co.uk/downloads

Note:

Audinate® is a registered trademark of Audinate Pty Ltd.
Dante™ is a trademark of Audinate Pty Ltd.

Document Change History

Issue	Amendment Summary	Date
1	Draft release for internal use	01/03/11
2	Draft release for internal use	02/03/11
3	First release	10/12/12
4	1) "Batteries shall not be exposed to excessive heat such as sunshine, fire etc" warning added for EN 60065. 2) DBB max cable run added (1 m). 3) Max dimensions for RJ45 connector added. 4) Current consumption updated.	27/02/13
5	1) Document part number (M0641_27) added to the bottom of the front cover. 2) BOA Contact Inputs note corrected: contacts are configurable as digital or analogue in groups of 4 (port) not in groups of six. 3) DVA format added to the Technical Specification. 4) Expansion port label updated from "EXPAND" to "DBB" per new silkscreen. 5) AUDIO INPUTS: fire microphone with hardwired PTT should not be powered from Vipedia. 6) BOA diagram shows EMC gasket fitment. 7) Current consumption updated.	05/12/13
6	1) DBB: max cable run corrected from 1 m to 4 m. 2) Accreditation logos/number removed from the back of the front page (as they may change on recertification). 3) BOA02 connections details added. 4) EMS/MPS connection diagrams added. 5) Current consumption updated. 6) Typos corrected, some paragraphs re-worded and additional info added for clarity.	29/08/14

7	1) Template updated.
	2) Technical Specification updated:
	  a) Phantom power voltage added (48 V).
	  b) Digital contact input voltage range and 100 kohms resistor to ground added.
	  c) Contact outputs: max voltage & current per output and supply max current added.
	  d) DVAs: 12 kHz and 24 kHz sample rate added.
	  e) IP rating corrected: from IP30 to IP20.
	  f) On-board analogue contact input voltage range added for non-monitored and monitored inputs.
	  g) Baud rate added to serial ports.
	  h) Optional Modules updated.
	  i) Changeover relays updated for include use with RCB01.
	  j) Hard Clipper and Surveillance Tone: both available as standard since V1.9 (footnote removed).
	  k) ANS Minimum Threshold / ANS Maximum Threshold updated from 50 dBA / 90 dBA to 55dBA / 95 dBA.
	3) Network Card USB port added to connector description.
	4) Connection diagram for EAP01 added.
	5) Crosstalk corrected: from ">70 dB at 1 kHz" to "> 70 dB below full output at 1 kHz"
	6) Rear panel RJ45 description corrected from "jack" to "socket".
	7) AMP CTRL connector pinout updated: from ACAN DXP/DXN to DXP/DXN.
	8) BOA01 and BOA02: T568B colour added to RJ45 pin numbering.
	9) CE statement updated to new format.
	10) ETH3 and ETH4 description: from 1000BASE-T to 100BASE-T.
	11) AUDIO INPUTS: note on power supply removed as power supply always enabled irrespective of microphone configuration (since V2.1).
	12) Relay 2 description updated to include user with RCB01.
	13) Safety and Precautions updated mostly for CB compliance, for example (see document for full details):
	  a) Restricted access location.
	  b) No copper connections between peripherals and the INTEGRA between buildings. Fibre interconnection is acceptable.
	  c) Lithium battery temperature rating to be greater than 75 °C.
	  d) Battery replacement/disposal warnings.
		17/05/19

	14) ETH ports: cable requirements changed from CAT5 E to CAT5 FTP or STP for EMC compliance. 15) Cables: Pirelli replaced by Prysmian. 16) EIA 568-B updated to T568B per Telecommunications Industry Association (TIA) 17) Typos corrected, some paragraphs re-worded and additional info added for clarity.		

8	1) Document Change History added.
	2) QR code to ASL downloads page (back of the front cover).
	3) CE declaration - RoHS Directives updated to include 2015/863/EU.
	4) On-board contact input description updated to warn that earth leakage faults may be reported by the Fire Panel using voltage-reversal method due to 100 kohms resistance to ground. If voltage-reversal method is required, use BMB01 to avoid possible earth leakage fault reports by the Fire Panel.
	
	Opto-isolated changed to opto-coupled per above.
	
	5) USB port removed from front panel images and drawings (no longer present on new units).
	6) RTC Lithium battery codes corrected: from "Panasonic CR2032/BS" to "Panasonic BR2032 or Murata CR2032X".
	7) Dante™ Module changed to Dante Brooklyn II Module for clarity.
	8) Technical Specification updated:
	   a) Residual Noise corrected from "<90 dBu (A)" to "<-90 dBu (A)".
	   b) Note on on-board contacts for Fire Panel using voltage-reversal method added (see 4) above).
	   c) IP Audio Protocol updated:
	   <u>From:</u>
	   IP Audio Protocol (with optional Network Card)...........................12 x ASL PMC (6 x in and 6 x out)
	   <u>To:</u>
	   Audio over IP (requires Network Card) .... ASL PMC format
	                           Dante™ via optional Audinate® Brooklyn II module
	   Number of streams/channels in the footnote: depending on configuration 12 x PMC streams (6 x in + 6 x out) / 32 x Dante Rx channels.
	   d) Network Card USB port updated from "configuration purposes" to "diagnostic purposes".
	   e) Footnote on 24 kHz and 12 kHz DVA format updated to include the required software version.
	   f) "GPS not supported on software version V4.2.0.1 (or later)" added to the footnote.
	   g) BOA01/BOA02 - AMP CTRL connection: ACAN DXP/DXN updated to DXP/DXN
	   h) Mixing data updated to V4.2.0.2:
	     • "optional MIX-DSP Module" removed
	     • Footnote added: "Mixer used for listen-in only at the time of publication of this document."
	   i) Input/Output EQ Band Reset removed as now disabled on the RDT.
	   j) Input EQ frequency range updated to V4.2.0.2:
	   <u>From:</u>
	   Low: 50 to 200 Hz / Low-Mid: 200 Hz to 20 kHz / High-Mid: 200 Hz to 20 kHz / High: 2 Hz to 20 kHz
	   <u>To:</u>
	   Low: 10 to 1 kHz / Low-Mid: 20 Hz to 20 kHz / High-Mid: 20 Hz to 20 kHz / High: 1 kHz to 20 kHz
	   k) Output EQ frequency range updated to V4.2.0.2:
	   <u>From:</u>
	   Low (Band-1): 50 to 500 Hz / Band (2-9): 20 Hz to 20 kHz / High (Band-10): 2 to 12 kHz
	   <u>To:</u>
	   Low (Band-1): 20 to 1 kHz / Band (2-9): 20 Hz to 20 kHz / High (Band-10): 1 to 12 kHz
	   l) Input/Output Peak Limiter now show range for Attack, Hold and Make Up Gain.
	   m) Test Tone Inputs removed as they have never been supported in the PAVA SCT and they are no longer supported since V4.0.0.0.
	   n) Cross Over Filters removed as not supported.
	   o) Footnote on DANS limitation updated to: local outputs 1 to 4 (earlier than V3.3.2.0) / local outputs 1 to 12 (V3.3.2.0 or later).
	9) 1 GigE added to EHT5/6 ports description.
	10) References to rear panel connectors corrected for BOA01 and BOA02.
			12/01/21

Contents

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1   Safety and Precautions

Observe all safety information both on the equipment and in this section.

Environmental

Always ensure adequate ventilation is provided for the VIPEDIA-12 by fitting 1U ventilation panels above and below the equipment and do not obstruct ventilation holes.

The temperature and humidity ranges shown in the specifications for the VIPEDIA-12 must not be exceeded.

The VIPEDIA-12 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.

Objects containing liquids should not be placed upon the VIPEDIA-12.

EMC

In the close proximity of some radio frequency transmitters, the signal to noise ratio of the VIPEDIA-12 may be reduced. If this occurs, re-location of the VIPEDIA-12 or the signal cables is recommended.

Installation and Servicing

The VIPEDIA-12 must be installed in a restricted access location such that there is no operator access to the VIPEDIA-12 or wiring.

Copper connections between peripherals and the VIPEDIA-12 should not be run between buildings as the equipment may be subjected to transient voltages due to atmospheric discharges and faults within power distribution systems. Fibre Interconnection is acceptable.

Servicing and installation work should be carried out by qualified personnel only.

Service Access is permitted only to those with the necessary training and expertise and can take responsibility for their own safety when working on the VIPEDIA-12.

Power Connections

Ensure power supply cabling is adequately rated for the unit's operating current and protected, in case of short circuit, by a correctly rated fuse or circuit breaker. This is particularly important for supply feeds from the 24 V backup batteries which can deliver short circuit currents of several hundred amps.

LED and Laser Components

The VIPEDIA-12 is a Class 1 LED product.

The VIPEDIA-12 with fibre optic modules is a Class 1 Laser product.

ESD Precautions

The VIPEDIA-12 contains static-sensitive devices. Observe ESD precautions when handling this product with cover removed or when making connections.

Fuse Replacement

Always replace blown fuses with the correct type and rating.

Battery Replacement, Handling and Storage

Caution! Risk of explosion if battery is replaced by an incorrect type.

The VIPEDIA-12 contains a lithium battery.

The maximum temperature rating of the battery varies from manufacturer to manufacturer.

The temperature rating of the chosen battery must be greater than 75°C (for example, Panasonic BR2032 or Murata CR2032X).

External 24 V DC batteries connected to this unit can deliver very high currents that could cause fire or burns.

Take care to avoid short-circuits of the battery supply by tools or jewellery.

Insulated battery terminal covers must always be fitted.

Do not allow tools or unconnected cables to rest on top of batteries.

Always use insulated tools.

Batteries should not be exposed to excessive heat such as sunshine, fire, etc.

External batteries should not be exposed to temperatures exceeding 25°C or stored for periods of more than a few weeks without charging as this can significantly reduce their service life.

Dispose of all batteries responsibly by using authorised Waste Contractors and by ensuring all relevant local waste regulations are followed.

Dispose of used batteries according to the instructions.

Never bury in the ground or incinerate at end-of-life.

Optical Fibre Connector and Module Handling

Optical fibre connectors and modules are precision-made components and must be handled accordingly.

Do not expose optical fibre connectors and modules to impact as damage to the surface of optical connectors may cause higher attenuation impairing the transmission quality.

Always fit optical fibre connectors and modules with protective caps to guard them against mechanical damage and contamination. The protective caps should only be removed prior to installation.

Once the protective caps have been removed, check the surfaces of the optical fibre connectors to ensure that they are clean, and clean them if necessary. Clean the optical fibre connectors using a special optical fibre cleaning tool or a clean lint-free cellulose cloth. Isopropyl alcohol (99%) can be used for cleaning.

2   Preparation

1.   Read and observe the safety instructions and guidelines in Section "1 Safety and Precautions" (page 7).

⚠️   Failure to follow these instructions and guidelines may cause personal injury and/or damage to the equipment.

2.   Gather the following documentation and tools:

- The system design documentation of the specific location

- A small flat-bladed screwdriver

- Pozidriv screwdrivers (No 1 and 3)

- A pair of wire cutters/strippers

- Ferrules and crimping tool

3.   Gather the equipment (in its original packing).

4.   A standard 19-inch rack is required for the installation.

The rack should be fitted with supporting rails, ventilation panels, and wired with power supply, signal, and control wiring to suit the requirements of the specific system design. It should meet the rules and guidelines provided in the VIPEDIA-12 Rack Design Guide (ASL T-0667-0185).

⚠️   If the VIPEDIA-12 is intended to be table or shelf mounted, i.e. not in a 19-inch standard rack, then the unit should always be fitted into a 19-inch desk case or flight case. This is to prevent ingress of dust or debris that may otherwise occur over a period of time.

ⓘ   DIN rail mounting Break-Out Adaptors (BOA) are available for easier rack wiring.

BOA01 (ASL P/N A0641006)	**BOA02 (ASL P/N A0664244)**
Screw terminals: external wiring RJ45: VIPEDIA-12 EOL and ANS resistors: factory fit option	Screw terminals: external wiring RJ45: VIPEDIA-12
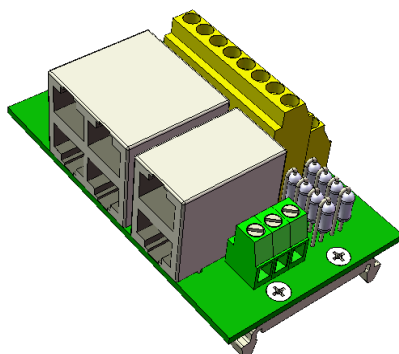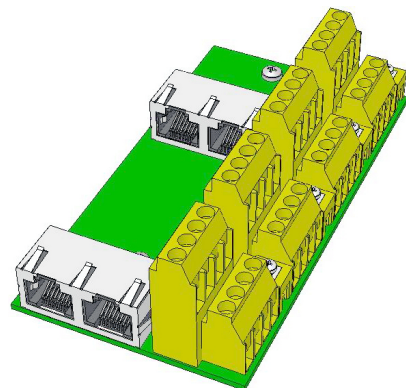
3   Unpacking and Handling

1.   Observe any markings or warnings on the package prior to handling and opening.

2.   Check the equipment package for signs of damage during transport. Report problems to the carrier or supplier.

3.   Unpack the equipment in a dry area, handling the equipment with care.

4.   Check the equipment package contents for completeness. Report any missing items immediately.

VIPEDIA-12 package contents:
- 1 x VIPEDIA-12 product (fitted with handles and any factory fit items)
- 2 x WAGO cage clamp terminals (2-way)

5.   It is advisable to retain the original equipment packing (containers and materials) in the event that the equipment ever needs returning for service.

6.   If the packing is not to be retained, the packing materials should be either recycled or disposed of according to local regulations.

7.   Ensure that the name and address of the Authorised Distributor from whom you purchased the product is recorded on the "Service and Warranty" page of this document for future reference.

8.   Repacking instructions are provided in Section "11 Packing for Return" (page 51).

4   Installation

⚠️ Please read and observe the safety information guidelines available on the product and in Section "1 Safety and Precautions" (page 7) prior to installation. Failure to follow these instructions and guidelines may cause personal injury and/or damage to the equipment.

1.   Ensure that the power supply from the central equipment rack is turned off.

2.   Fit the VIPEDIA-12 into a 19-inch standard equipment rack on supporting rails, and secure the unit in position using the fixing screws and washers provided.

VENTILATION PANEL
VIPEDIA-12
VENTILATION PANEL
GENERIC 19-INCH 1U FORMAT

⚠️ ENSURE 1U VENTILATION PANELS ARE FITTED ABOVE AND BELOW THE EQUIPMENT. DO NOT OBSTRUCT VENTILATION HOLES.

M6 POZIDRIV SCREW
M6 PLAIN WASHER
M6 CAGE NUT

⚠️ SUPPORTING RAILS MUST BE USED.
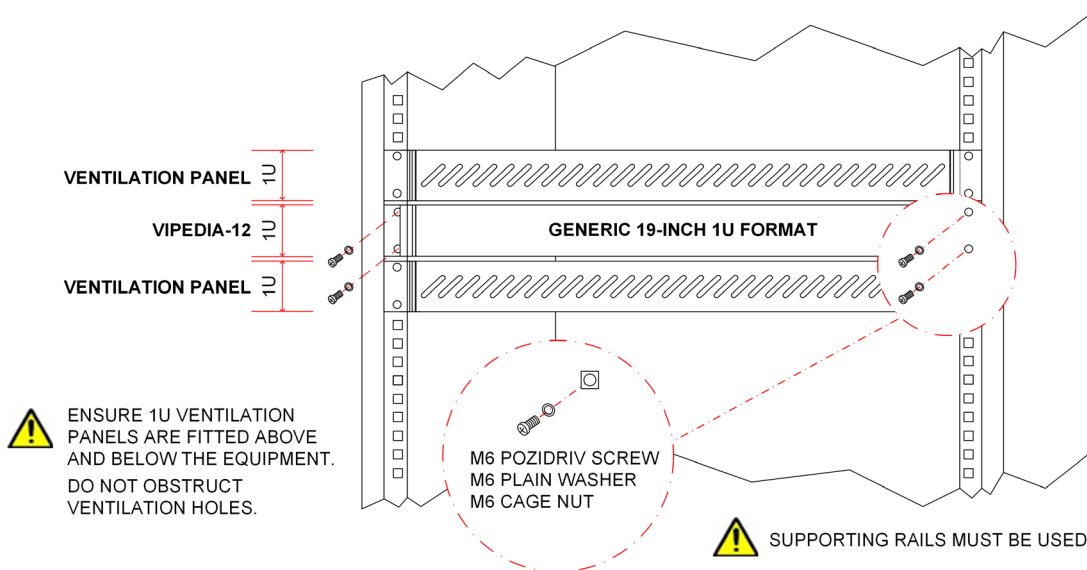
3.   If required, fit the memory card into the Micro-SD card slot.

• Carefully insert the memory card into the Micro-SD card slot (with the terminal side facing down) until it clicks into place.

• Remove the memory card by lightly pushing the card once.

Warning:

When inserting or removing the memory card, be careful to not drop the memory card.

Memory card slot (for future use)

(present if Network Card is fitted)

VIPEDIA-12 REAR PANEL

18-40V === 2A
CONTACTS OUT 1 - 6
- IN +
18-40V === 2A
7 - 12 CONTACTS OUT
μSD 2
DIAG.
ETH 3   ETH 4
ETH 5   ETH 6
DBB IN 1
DBB   μSD 1
S M
DBB OUT 1

Memory card slot
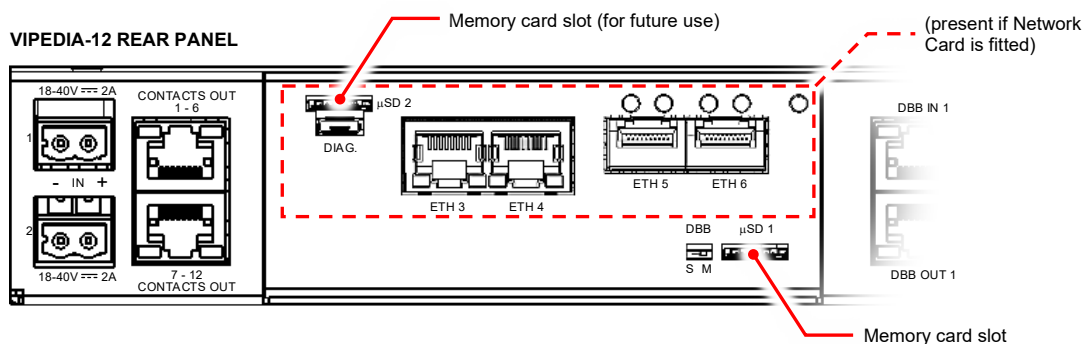
4. Position the hardware bypass audio switch (DBB switch) as required.

See Section "7.6 Expansion Unit Connection" (page 45) for expansion unit connection and DBB switch setting details.

VIPEDIA-12 REAR PANEL

(present if Network Card is fitted)
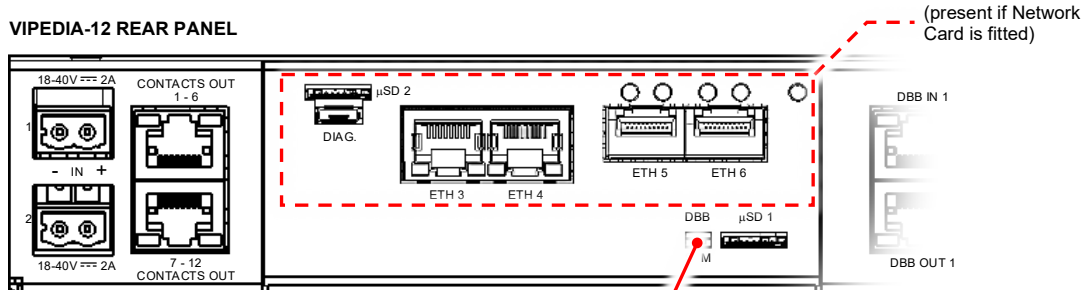
VIPEDIA-12	DBB Switch Position
Factory Default (stand-alone unit)	S
Expansion Unit (DBB Member 2, 3, and 4)	S
Base Unit of a DBB Group (DBB Member 1)	M

5. If the unit is fitted with Network Card, fit the SFP module(s) if used.

VIPEDIA-12 REAR PANEL

SFP cages for optional SFP modules:
- MM (multimode fibre) module
- SM (single mode fibre) module
- RJ45 (copper) module

(refer to ASL for availability and compatibility)
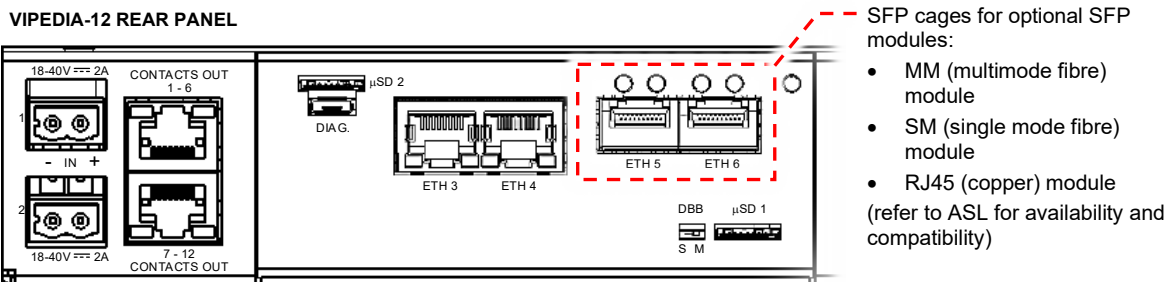
6. Connect the field wiring as required.

Refer to Section "7.1 VIPEDIA-12 Connections (Rear Panel)" (page 16) for pinout details.

VIPEDIA-12 REAR PANEL

Ethernet (on Network Card)

Local Expansion

RS232

Contacts (Inputs)

Audio Outputs (A)

Contacts (Outputs)

Ethernet

Control

Audio Inputs & Serial Interfaces

Audio Outputs (B)

Amplifier Control

Microphone Auxiliary
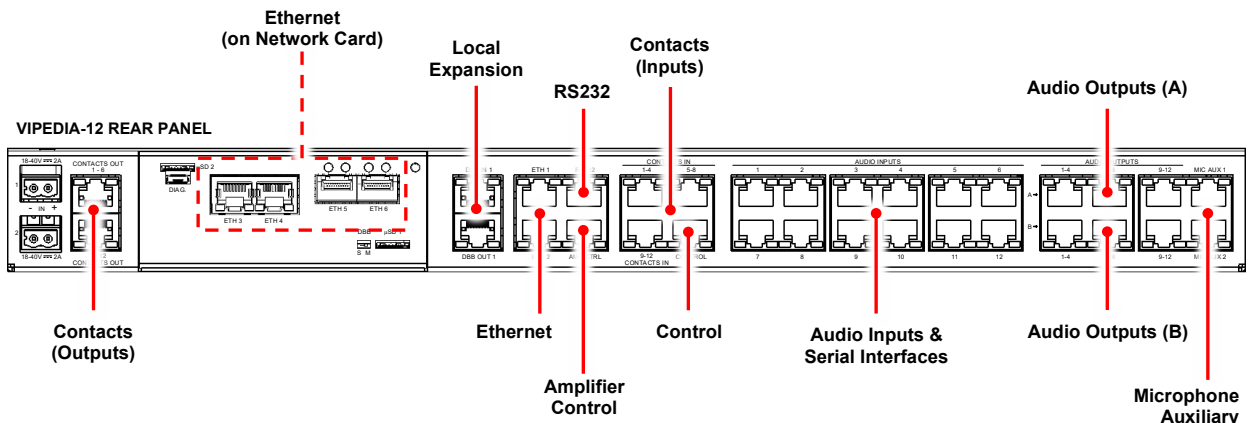
7. Connect the dual power supply wiring to the rear panel connectors.

DUAL DC POWER
SUPPLY: 18-40 V DC

WAGO Connectors:

Use one of the two methods shown in the diagram below to terminate the cabling in the Wago connectors.

When the screwdriver is removed, the bare end of the wire will be held securely by the contact spring.

To remove the wire, reverse the pr
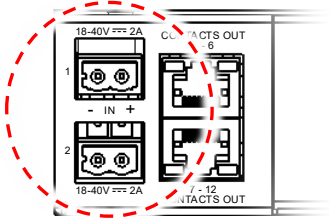
Notes:

1) Ensure power supply cabling is adequately rated.
2) Always route power supply cabling away from input cabling in the equipment rack to reduce the risk of noise pick-up.
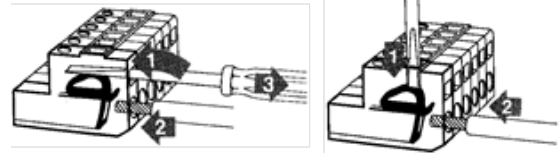
8. Power the unit on from the equipment rack.

9. The installation is now complete and ready for system commissioning.

5 Indicators and Controls

Item			Description
①	**LCD Display**		2 x 40 backlit alphanumeric display Used to display control menu, faults, overall system status, and configuration data.
②	**Loudspeaker**		Fault Sounder and Audio Monitor
③	**Indicators (LED)**	**power** (green)	Lit if the unit is receiving DC power.
		voice alarm (red)	Lit to indicate that a voice alarm condition is present in the PA/VA system.
		system fault (yellow)	Lit to indicate that a system fault has been detected in the PA/VA system. This requires immediate action as part(s) of the system used for emergency functions may have been affected. A system fault will always cause the "fault" LED to be lit as well. A system fault is triggered by a failure of any processor or memory, critical to the Voice Alarm system, including those of the VIPEDIA-12 itself. A communication fault between the VIPEDIA-12 and any equipment or device that has been configured at the VIPEDIA-12 and that is critical to Voice Alarm functions will also trigger a system fault.
		fault (yellow)	Lit to indicate that the unit has detected a fault. Flashes if a fault has not yet been accepted.
	Keys	◄ ►	The left and right arrow keys move the item selection in the direction selected, to the next item in the menu. The selected item is indicated by [brackets] around the selection.
		▲ ▼	The up and down arrow keys toggle a selection, or increment a number, or a letter of the alphabet when editing. The rotary encoder acts in the same manner as these keys, and enables faster editing.
		SELECT	Press after selecting an item to confirm the selection.
		BACK	Press after selecting an item to cancel the selection. If pressed repeatedly, this returns the display to the top-level menu.
		FAULT ACCEPT	Accepts all current faults, steadies the flashing fault LED indication, and turns off the audible alarm until a new fault condition occurs.
		FAULT CLEAR	Clears all faults and sets all connected equipment to the "no faults" state, which also cancels any amplifier changeovers in effect. If there are any faults present in the system, then they are detected anew, and reported again.
		AUDIO MON	Selects Audio Monitor sub-menu on the LCD display.
		LAMP TEST	Tests all indicators on the VIPEDIA-12 and on all connected mainframe and amplifier units. The sounder, the LCD display and the V2000 rack fans are also tested. The display shows "LAMP + LCD + SOUNDER TEST + FAN TEST", and then, solid white characters. The menu locks for the entire duration of the test. **Notes**: a) The fault sounder is only tested on Fault Master units. b) The V2000 built-in fan is not tested by the LAMP TEST function. It can be tested by pressing the FAULT CLEAR key. c) The audio level (dB) LEDs on the D150/D500 amplifiers are not tested. They can be tested by routing audio to associated zones. d) The V2000 rack fans will only be turned on if controlled by a GPIO digital output.
		DEFAULT	Press to clear previously configured text strings quickly during system configuration, or to return fields to their default values.
④	**Rotary Encoder**		An alternative for the ▲ and ▼ arrow keys for fast increment and decrement of menu items. During Audio Monitoring it also acts as a volume control.

6 Support Information

6.1 Hardware Build Standard (BS)

The hardware Build Standard (BS) is part of the product's serial number. The serial number label is located on the side of the unit; see example below.

The last section of the barcode indicates the Build Standard (BS).
Example: 1842 202210 **011** → BS = 011

(Actual label may differ from image shown.)

6.2 Hardware Bypass Link Setting for Hardware BS 2B or older

(Blanking plate or expansion module removed)
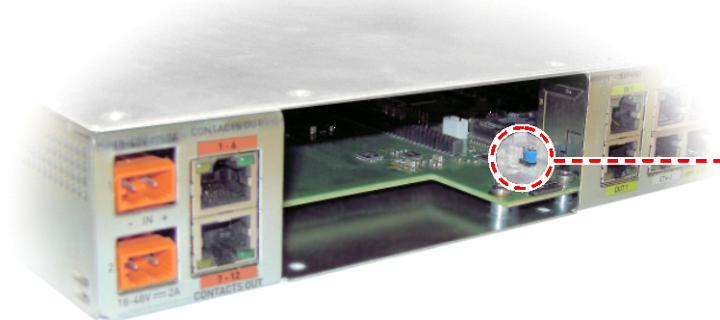
Hardware Bypass Link Settings (BS 2B or older)		
VIPEDIA-12	**LK5**	
Expansion Unit Factory default		1-2: Not fitted 3-4: Not fitted
Base Unit		1-2: Fitted 3-4: Not fitted

7 Connections

7.1 VIPEDIA-12 Connections (Rear Panel)
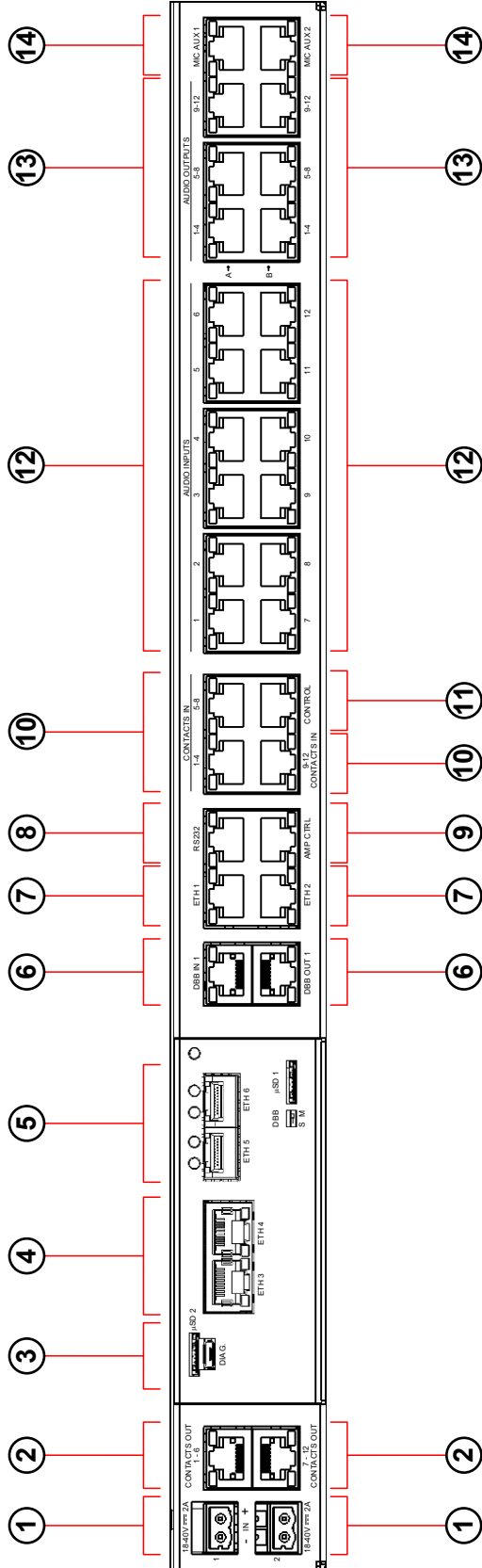
③ ④ ⑤ Present if Network Card is fitted

⑥ For connection to Expansion Unit

⑨ VIPEDIA-12 Build Standard up to 1B: AUDIO-CAN

⑭ VIPEDIA-12 Build Standard up to 1B: FIREMIC 1 and FIREMIC 2

① **18V-40V: Dual DC Power Supply**

18-40V ⎓ 2A

1

− IN +

2

18-40V ⎓ 2A
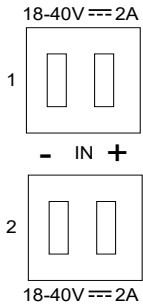
18V-40V: 2-way pluggable Wago cage clamp terminal (male)	
Signal	Description
+	+V supply (18 V to 40 V DC)
–	0 V supply

② **CONTACTS OUT 1-6 and 7-12: Contact Outputs 1 to 12**

CONTACTS OUT
1-6

8 7 6 5 4 3 2 1
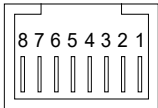
CONTACT OUTS 1-6: Standard RJ45 socket			
Pin	CAT5 Cable (T568B)	Signal	Description
1	white/orange	Contact 1	Open-drain output 1
2	orange	Contact 2	Open-drain output 2
3	white/green	Contact 3	Open-drain output 3
4	blue	Contact 5	Open-drain output 5
5	white/blue	Contact 6	Open-drain output 6
6	green	Contact 4	Open-drain output 4
7	white/brown	+Supply	+ve supply (as 18V-40V power supply input) (1.6 A) for open-drain outputs
8	brown	+Supply	+ve supply (as 18V-40V power supply input) (1.6 A) for open-drain outputs

1 2 3 4 5 6 7 8
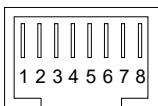
7-12
CONTACTS OUT

CONTACT OUTS 7-12: Standard RJ45 socket			
Pin	CAT5 Cable (T568B)	Signal	Description
1	white/orange	Contact 7	Open-drain output 7
2	orange	Contact 8	Open-drain output 8
3	white/green	Contact 9	Open-drain output 9
4	blue	Contact 11	Open-drain output 11
5	white/blue	Contact 12	Open-drain output 12
6	green	Contact 10	Open-drain output 10
7	white/brown	+Supply	+ve supply (as 18V-40V power supply input) (1.6 A) for open-drain outputs
8	brown	+Supply	+ve supply (as 18V-40V power supply input) (1.6 A) for open-drain outputs

ⓘ 1) Maximum Rated Current per output: 350 mA
2) Maximum Voltage per output: 60 V.

③ **DIAG.: USB Port (only if Network Card is fitted)**
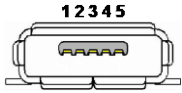
Standard USB Micro-AB socket		
Pin No.	**Signal**	**Description**
1	VBUS	+ V Supply (output)
2	D−	Data−
3	D+	Data+
4	ID	Permits distinction of host connection from slave connection: • Host: connected to Signal ground • Slave: not connected
5	GND	Signal ground

④ **ETH3 and ETH4: 100BASE-T Ethernet Ports (if Network Card is fitted)**
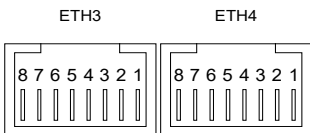
ETH3 and ETH4: Standard RJ45 socket			
Pin	**CAT5 Cable (T568B)**	**Signal**	**Description**
1	white/orange	TRANSMIT+	100BASE-T Ethernet Transmitted Data
2	orange	TRANSMIT-	Same as above
3	white/green	RECEIVE+	100BASE-T Ethernet Received Data
4	blue	–	Not used
5	white/blue	–	Not used
6	green	RECEIVE-	Same as above
7	white/brown	–	Not used
8	brown	–	Not used

⑤ **ETH5 and ETH6: Optional Ethernet Ports (1 GigE)**
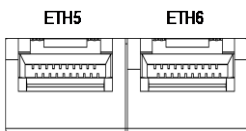
ETH5 and ETH6: SFP Cage (can be fitted with optional SFP modules)

• MM (multimode) module (LC duplex) (Cabling: per SFP module specification)
• SM (single mode) module (LC duplex) (Cabling: per SFP module specification)
• RJ45 (copper) module (Cabling: CAT5 FTP or STP standard cable)

⑥ **DBB IN 1 and OUT 1[1]: Expansion Ports**
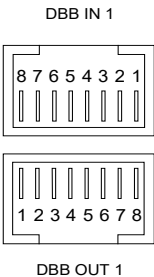
These ports are used for connection of Expansion VIPEDIA-12 units[2].

All signals are only relevant to the VIPEDIA-12 units.

Standard CAT5 FTP or STP cable must be used (maximum cable run = 4 m, entirely within the rack).

---

[1] VIPEDIA-12 Build Standard up to 2B: EXPAND IN 1 and OUT 1

[2] VIPEDIA-12 fitted with Dante Brooklyn II module does not support expansion units.

⑦ ETH1 and ETH2: 100BASE-T Ethernet Ports
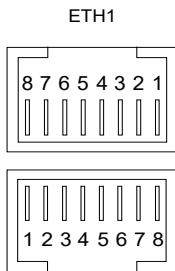
ETH1

ETH2

ETH1 and ETH2: Standard RJ45 socket			
Pin	CAT5 Cable (T568B)	Signal	Description
1	white/orange	TRANSMIT+	100BASE-T Ethernet Transmitted Data
2	orange	TRANSMIT-	Same as above
3	white/green	RECEIVE+	100BASE-T Ethernet Received Data
4	blue	–	Not used
5	white/blue	–	Not used
6	green	RECEIVE-	Same as above
7	white/brown	–	Not used
8	brown	–	Not used

⑧ RS232: RS232 Port
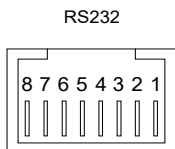
RS232

RS232: Standard RJ45 socket			
Pin	CAT5 Cable (T568B)	Signal	Description
1	white/orange	–	Not connected
2	orange	RX	RS232 Received Data (115200 baud)
3	white/green	TX	RS232 Transmitted Data (115200 baud)
4	blue	DTR	Data Terminal Ready
5	white/blue	GND	Common Ground
6	green	–	Not connected
7	white/brown	RTS	Request To Send
8	brown	CTS	Clear To Send

⑨ AMP CTRL[1]: Audio-CAN and Amplifier Control Port
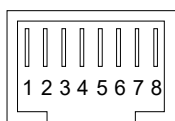
AMP CTRL

AMP CTRL: Standard RJ45 socket			
Pin	CAT5 Cable (T568B)	Signal	Description
1	white/orange	CAN_H	Controller Area Network (High)
2	orange	CAN_L	Controller Area Network (Low)
3	white/green	GND	0 V Reference
4	blue	AUDIO MON+	Audio Monitor Bus (–10 dBu nominal) (+ve)
5	white/blue	AUDIO MON-	As above but -ve
6	green	GND	0 V Reference
7	white/brown	DXP	For future use
8	brown	DXN	For future use

---

[1] VIPEDIA-12 Build Standard up to 1B: AUDIO-CAN

⑩ **CONTACTS IN 1-4, 5-8 and 9-12: Contact Inputs 1 to 12**

CONTACTS IN
1-4
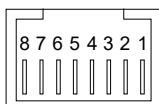
**CONTACTS IN 1-4: Standard RJ45 socket**
Pin	**CAT5 Cable (T568B)**	**Signal**	**Description**
1	white/orange	CI1+	Opto-coupled input 1 (+ve) / Analogue input 1
2	orange	CI1-	Opto-coupled input 1 (-ve)
3	white/green	CI2+	Opto-coupled input 2 (+ve) / Analogue input 2
4	blue	CI3+	Opto-coupled input 3 (+ve) / Analogue input 3
5	white/blue	CI3-	Opto-coupled input 3 (-ve)
6	green	CI2-	Opto-coupled input 2 (-ve)
7	white/brown	CI4+	Opto-coupled input 4 (+ve) / Analogue input 4
8	brown	CI4-	Opto-coupled input 4 (-ve)

CONTACTS IN
5-8
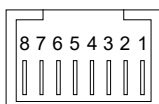
**CONTACTS IN 5-8: Standard RJ45 socket**
Pin	**CAT5 Cable (T568B)**	**Signal**	**Description**
1	white/orange	CI5+	Opto-coupled input 5 (+ve) / Analogue input 5
2	orange	CI5-	Opto-coupled input 5 (-ve)
3	white/green	CI6+	Opto-coupled input 6 (+ve) / Analogue input 6
4	blue	CI7+	Opto-coupled input 7 (+ve) / Analogue input 7
5	white/blue	CI7-	Opto-coupled input 7 (-ve)
6	green	CI6-	Opto-coupled input 6 (-ve)
7	white/brown	CI8+	Opto-coupled input 8 (+ve) / Analogue input 8
8	brown	CI8-	Opto-coupled input 8 (-ve)

9-12
CONTACTS IN
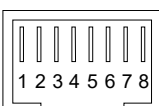
**CONTACTS IN 9-12: Standard RJ45 socket**
Pin	**CAT5 Cable (T568B)**	**Signal**	**Description**
1	white/orange	CI9+	Opto-coupled input 9 (+ve) / Analogue input 9
2	orange	CI9-	Opto-coupled input 9 (-ve)
3	white/green	CI10+	Opto-coupled input 10 (+ve) / Analogue input 10
4	blue	CI11+	Opto-coupled input 11 (+ve) / Analogue input 11
5	white/blue	CI11-	Opto-coupled input 11 (-ve)
6	green	CI10-	Opto-coupled input 11 (-ve)
7	white/brown	CI12+	Opto-coupled input 12 / Analogue input 12 (+ve)
8	brown	CI12-	Opto-coupled input 12 (-ve)

ⓘ 1) Internal 4k7Ω pull-up to +7 V (configurable per port)

2) Opto-coupled interfaces for level conversion have built-in resistor to suit voltages of +12 to +40 V.

The opto-coupled interfaces provide an internal resistance to ground of approximately 100 kΩ which may cause Fire Alarm Panels connected via the voltage-reversal method to report earth leakage faults.

For all applications that require a voltage-reversal interface with the Fire Alarm Panel, ASL recommend that an ASL BMB01 Remote I/O Unit is used in order to avoid the possibility of earth leakage faults being reported by the Fire Alarm Panel.

⑪ **CONTROL: Fault/Voice Alarm/Control Relays and ASL BMB01 Serial Interface**
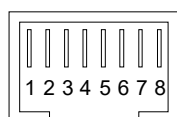
CONTROL

Standard RJ45 socket			
Pin	CAT5 Cable (T568B)	Signal	Description
1	white/orange	Relay 1 N/C	Fault relay
2	orange	Relay 1 COM	
3	white/green	Relay 1 N/O	
4	blue	Relay 2 COM	Voice Alarm relay (non-redundant systems) or Control relay (redundant systems)
5	white/blue	Relay 2 N/O	
6	green	Relay 2 N/C	
7	white/brown	BMB DXP	BMB control data / EIA RS485 9600 baud (Data+)
8	brown	BMB DXN	As above but Data-

ⓘ 1) Relay 1 - Fault relay: NO contacts closed in normal operation, open on fault.
2) Relay 2 - Voice Alarm relay: NO contacts open in normal operation, closed on Voice Alarm.
3) Relay 2 - Control relay: NO contacts open in normal operation, closed on critical fault in the other redundant unit. For use with RCB01 Changeover Relay Box. Refer to ASL for availability and compatibility.

⑫ **AUDIO INPUTS 1 to 12: Audio Inputs and RS485 Serial Interfaces 1 to 12**

AUDIO INPUTS
1 TO 6
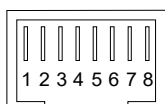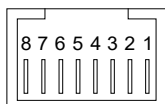
AUDIO INPUTS
7 TO 12

AUDIO INPUTS 1 to 12: Standard RJ45 socket			
Pin	CAT5 Cable (T568B)	Signal	Description
1	white/orange	AUDIO IN+	Balanced Audio Input (+ve)
2	orange	AUDIO IN-	Balanced Audio Input (-ve)
3	white/green	DXP	Microphone control data EIA RS485 19200 baud (Data+)
4	blue	+SUPPLY	+V DC supply output (as supply input) Fused at 350 mA per pair, i.e, inputs 1-2, 3-4, 5-6, 7-8, 9-10, and 11-12.
5	white/blue	+SUPPLY	Same as above
6	green	DXN	Microphone control data EIA RS485 19200 baud (Data-)
7	white/brown	0V	0 V supply
8	brown	0V	Same as above

ⓘ Fire microphones with hardwired PTT and Speak Now (input 1 or 2) should be powered from an external power supply, i.e. not from the VIPEDIA-12.

⑬   **AUDIO OUTPUTS 1-4, 5-8 and 9-12 (A&B): Audio Outputs 1 to 12 (A&B)**

A
AUDIO OUTPUTS
1-4

8 7 6 5 4 3 2 1

1 2 3 4 5 6 7 8
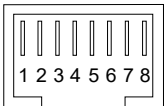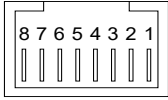
1-4
AUDIO OUTPUTS
B

AUDIO OUTPUTS 1-4 (A&B): Standard RJ45 socket			
Pin	**CAT5 Cable (T568B)**	**Signal**	**Description**
1	white/orange	AUDIO OUT 1+	Balanced audio output 1 (+ve)
2	orange	AUDIO OUT 1-	Balanced audio output 1 (-ve)
3	white/green	AUDIO OUT 2+	Balanced audio output 2 (+ve)
4	blue	AUDIO OUT 3+	Balanced audio output 3 (+ve)
5	white/blue	AUDIO OUT 3-	Balanced audio output 3 (-ve)
6	green	AUDIO OUT 2-	Balanced audio output 2 (-ve)
7	white/brown	AUDIO OUT 4+	Balanced audio output 4 (+ve)
8	brown	AUDIO OUT 4-	Balanced audio output 4 (-ve)

A
AUDIO OUTPUTS
5-8

8 7 6 5 4 3 2 1

1 2 3 4 5 6 7 8
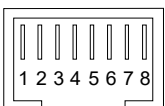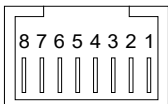
5-8
AUDIO OUTPUTS
B

AUDIO OUTPUTS 5-8 (A&B): Standard RJ45 socket			
Pin	**CAT5 Cable (T568B)**	**Signal**	**Description**
1	white/orange	AUDIO OUT 5+	Balanced audio output 5 (+ve)
2	orange	AUDIO OUT 5-	Balanced audio output 5 (-ve)
3	white/green	AUDIO OUT 6+	Balanced audio output 6 (+ve)
4	blue	AUDIO OUT 7+	Balanced audio output 7 (+ve)
5	white/blue	AUDIO OUT 7-	Balanced audio output 7 (-ve)
6	green	AUDIO OUT 6-	Balanced audio output 6 (-ve)
7	white/brown	AUDIO OUT 8+	Balanced audio output 8 (+ve)
8	brown	AUDIO OUT 8-	Balanced audio output 8 (-ve)

A
AUDIO OUTPUTS
9-12

8 7 6 5 4 3 2 1

1 2 3 4 5 6 7 8
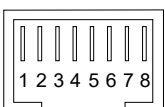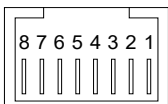
9-12
AUDIO OUTPUTS
B

AUDIO OUTPUTS 9-12 (A&B): Standard RJ45 socket			
Pin	**CAT5 Cable (T568B)**	**Signal**	**Description**
1	white/orange	AUDIO OUT 9+	Balanced audio output 9 (+ve)
2	orange	AUDIO OUT 9-	Balanced audio output 9 (-ve)
3	white/green	AUDIO OUT 10+	Balanced audio output 10 (+ve)
4	blue	AUDIO OUT 11+	Balanced audio output 11 (+ve)
5	white/blue	AUDIO OUT 11-	Balanced audio output 11 (-ve)
6	green	AUDIO OUT 10-	Balanced audio output 10 (-ve)
7	white/brown	AUDIO OUT 12+	Balanced audio output 12 (+ve)
8	brown	AUDIO OUT 12-	Balanced audio output 12 (-ve)

⑭ **MIC AUX 1 / MIC AUX 2[1]: Auxiliary Microphone Interface (Hardware Bypass Emergency Microphone and Listen-in Interfaces)**
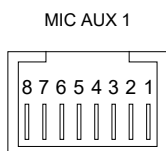
MIC AUX 1

MIC AUX 1: Standard RJ45 socket			
Pin	CAT5 Cable (T568B)	Signal	Description
1	white/orange	PTT2+	Fire microphone 2 PTT+ (Push-To-Talk)
2	orange	PTT1+	Fire microphone 1 PTT+ (Push -To-Talk)
3	white/green	LIST1+	Listen-in audio output 1+
4	blue	S-NOW1	Fire Microphone 1 Speak Now LED
5	white/blue	S-NOW2	Fire Microphone 2 Speak Now LED
6	green	LIST1-	Listen-in audio output 1-
7	white/brown	PTT2-	Fire microphone 2 PTT- (Push -To-Talk)
8	brown	PTT1-	Fire microphone 1 PTT- (Push -To-Talk)
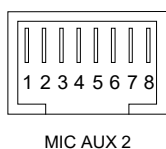
MIC AUX 2

MIC AUX 2: Standard RJ45 socket			
Pin	CAT5 Cable (T568B)	Signal	Description
1	white/orange	–	Not connected
2	orange	PTT2+	Fire microphone 2 PTT+ (Push -To-Talk)
3	white/green	LIST2+	Listen-in audio output 2+
4	blue	S-NOW2	Fire Microphone 2 Speak Now LED
5	white/blue	–	Not connected
6	green	LIST2-	Listen-in audio output 2-
7	white/brown	–	Not connected
8	brown	PTT2-	Fire microphone 2 PTT- (Push -To-Talk)

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[1] VIPEDIA-12 Build Standard up to 1B: FIREMIC 1 / FIREMIC 2

7.2   External Cabling Requirements

Signals	Cable Description	Termination	Suggested Type
DC supply input	1 x 2-core	2-way pluggable WAGO cage clamp terminal (5.08 mm) (female)	Suitably rated 2-core cable
ASL paging microphones	Audio: 1 twisted pair, overall screened Data: 1 twisted pair, overall screened Power: 2 twisted pairs, overall screened	Screw terminals (BOA) or RJ45	Standard overall screened CAT5 FTP or STP[3]
ASL hardware bypass emergency microphone	Audio: 1 x 2 core, screened Data: 1 x 2 core, screened Other signals: 1 x 3 core, screened	Screw terminals (BOA) or RJ45	Fire rated equivalent cables such as Prysmian FP200 (LSF Low Smoke and Fume) [3]
Audio outputs	Twisted pairs, individually screened	Screw terminals (BOA) or RJ45	Suitably rated cable with required number of pairs individually screened
Contact inputs and outputs	Overall screened cable with required number of cores	Screw terminals (BOA) or RJ45	Suitably rated overall screened cable with required number of cores
Listen-in	1 x twisted pair, overall screened	Screw terminals (BOA) or RJ45	Suitably rated overall screened cable (1 twisted pair)
Ethernet	Standard LAN cable	RJ45	Must be CAT5 FTP or STP
DBB bus	Standard CAT5 patch lead	RJ45	Must be CAT5 FTP or STP (max. cable run = 4 m, entirely within the rack)
RS485 serial port	1 x twisted pair, overall screened	Screw terminals (BOA) or RJ45	Suitably rated overall screened cable (1 twisted pair)
Audio CAN	2 x twisted pairs, overall screened	Screw terminals (BOA) or RJ45	Suitably rated overall screened cable (2 twisted pairs)
RS232 serial port	Serial data cable	RJ45	As required to connect to the external device being used
USB serial port	Micro USB OTG serial data cable	USB Micro-AB	As required to connect to the external device being used

1)   Fire rated equivalent cables such as Prysmian FP200 (LSF Low Smoke and Fume) should be used for safety critical applications.

2)   Standard overall screened CAT5 FTP or STP can be used for connection within the rack.

3)   For details, refer to the documentation specific to the microphone being used.

4)   RJ45 plugs with excessively bulky rubber boot may not fit the connectors on the VIPEDIA-12 properly when stacked; see rubber boot dimension below.
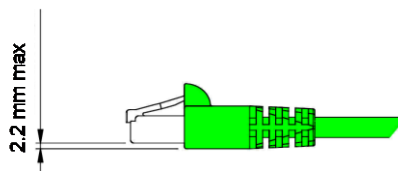
5)   For EMC compliance:

- Screened cables must be used where specified.
- All screen tails must be less than 3 cm.
- EMC gasket must be fixed to the gold plated PCB land on the BOA01/BOA02 (if used); see Sections "7.3.1 BOA01 Connections" (page 25) and "7.3.2 BOA02 Connections" (page 36).

Refer to BS 7671 (Requirements for Electrical Installations) or other appropriate local standards for guidelines on maximum potential cable lengths given the actual installation parameters.

7.3 Break-Out Adaptor (BOA) Connections

7.3.1 BOA01 Connections
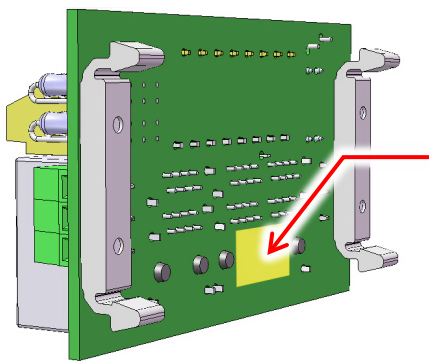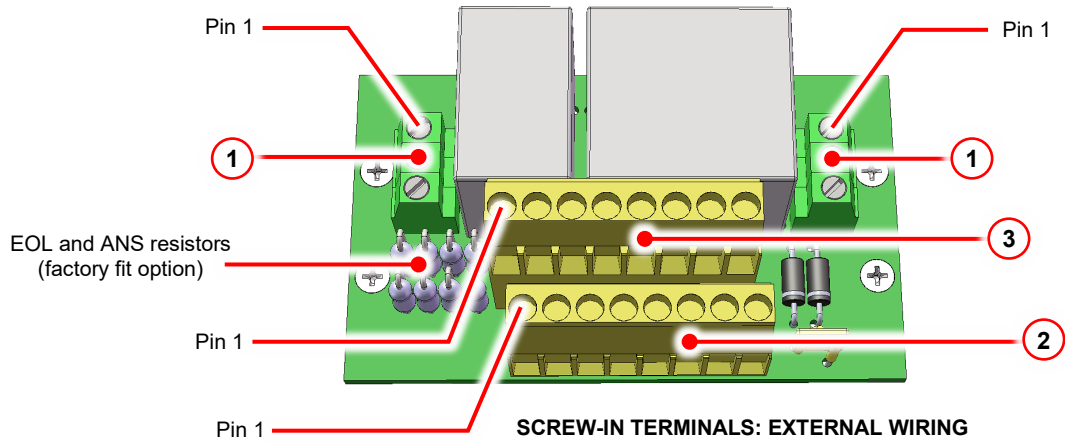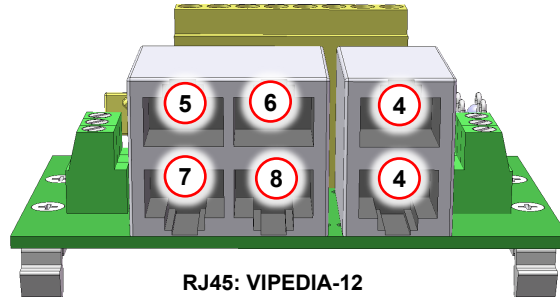
RJ45: VIPEDIA-12

Pin 1

Pin 1

1

1

EOL and ANS resistors
(factory fit option)

3

Pin 1

2

Pin 1

SCREW-IN TERMINALS: EXTERNAL WIRING

⚠️ **For EMC compliance, ensure that 20 mm length of EMC gasket[1] (provided) is fixed to the gold-plated PCB land.**

Ensure that its compression to 5 mm high (to DIN rail) does not connect to other tracks on the PCB.

[1] Wurth EMC gasket PN 3031010

7.3.1.1   BOA01 - Audio Input and Serial Interface (1 to 12) Connections

Field Connection				Connection to VIPEDIA-12 (via CAT5 patch lead)		
Screw Terminal ①						
From external power supply	Description	Signal	Pin	Not applicable (Connected to screw terminal ③ via the PCB.)		
	+V supply input (18 – 40 V) / 500 mA	24 V	1			
	+V supply input (18 – 40 V) / 500 mA	24 V	2			
	0 V supply	0 V	3			
To/From external device (e.g. ASL microphone)	**Screw Terminal ②**			**BOA01's RJ45** (see page 25) ④	**VIPEDIA-12's RJ45** (see page 16) ⑫ INPUTS 1 to 12	
	Description	Signal	Pin	Pin	T568B	Pin
	Balanced audio input+	AUDIO IN+	1	1	WH/OR	1
	Balanced audio input-	AUDIO IN-	2	2	OR	2
	RS485 data+	DXP	3	3	WH/GR	3
	RS485 data-	DXN	**4**	**6**	GR	**6**
	DC supply output (18 – 40 V)	+SUPPLY	**5**	**4**	BL	**4**
	DC supply output (18 – 40 V)	+SUPPLY	**6**	**5**	WH/BL	**5**
	DC supply output (0 V)	0V	7	7	WH/BR	7
	DC supply output (0 V)	0V	8	8	BR	8
	Screw Terminal ③			Not applicable		
	Description	Signal	Pin			
	Cable screen	SCREEN	1			
	DC supply output (18 – 40 V)	SUPPLY+	2			
	Cable screen	SCREEN	3			
	DC supply output (0 V)	0V	4			
	Cable screen	SCREEN	5			
	DC supply output (18 – 40 V)	SUPPLY+	6			
	Cable screen	SCREEN	7			
	DC supply output (0 V)	0V	8			
ⓘ	An external DC power supply (18 – 40 V) must be connected to screw terminal ① if the external device is to be powered from the screw terminal block ③.					

7.3.1.2 BOA01 - Auxiliary Microphone Interface Connections (Hardware Bypass Emergency Microphone PPT and Speak Now and Listen-in)

7.3.1.2.1 BOA01 - Auxiliary Microphone Interface 1 (MIC AUX 1)

Field Connection				Connection to VIPEDIA-12 (via CAT5 patch lead)		
Screw Terminal ①						
From external power supply	**Description**	**Signal**	**Pin**	Not applicable (Connected to screw terminal ③ via the PCB.)		
	+V supply input (18 – 40 V) / 500 mA	24 V	1			
	+V supply input (18 – 40 V) / 500 mA	24 V	2			
	0 V supply	0 V	3			
	Screw Terminal ②			BOA01's RJ45 (see page 25) ④	VIPEDIA-12's RJ45 (see page 16) ⑭ (Top)	
To/From external device	**Description**	**Signal**	**Pin**	**Pin**	**T568B**	**Pin**
	Fire microphone 2 PTT+ (Push-To-Talk)	PTT2+	1	1	WH/OR	1
	Fire microphone 1 PTT+ (Push -To-Talk)	PTT1+	2	2	OR	2
	Listen-in audio output 1+	LIST1+	3	3	WH/GR	3
	Listen-in audio output 1-	LIST1-	**4**	**6**	GR	**6**
	Fire Microphone 1 Speak Now LED	S-NOW1	**5**	**4**	BL	**4**
	Fire Microphone 2 Speak Now LED	S-NOW2	**6**	**5**	WH/BL	**5**
	Fire microphone 2 PTT- (Push -To-Talk)	PTT2-	7	7	WH/BR	7
	Fire microphone 1 PTT- (Push -To-Talk)	PTT1-	8	8	BR	8
	Screw Terminal ③			Not applicable		
	Description	**Signal**	**Pin**			
	Cable screen	SCREEN	1			
	DC supply output (18 – 40 V)	SUPPLY+	2			
	Cable screen	SCREEN	3			
	DC supply output (0 V)	0V	4			
	Cable screen	SCREEN	5			
	DC supply output (18 – 40 V)	SUPPLY+	6			
	Cable screen	SCREEN	7			
	DC supply output (0 V)	0V	8			

ⓘ An external DC power supply (18 – 40 V) must be connected to screw terminal ① if the external device (microphone) is to be powered from the screw terminal block ③.

7.3.1.2.2   BOA01 - Auxiliary Microphone Interface 2 (MIC AUX 2)

Field Connection				Connection to VIPEDIA-12 (via CAT5 patch lead)		
Screw Terminal ①						
From external power supply	Description	Signal	Pin	Not applicable (Connected to screw terminal ③ via the PCB.)		
	+V supply input (18 – 40 V) / 500 mA	24 V	1			
	+V supply input (18 – 40 V) / 500 mA	24 V	2			
	0 V supply	0 V	3			
To/From external device	**Screw Terminal ②**			**BOA01's RJ45** (see page 25) **④**	**VIPEDIA-12's RJ45** (see page 16) **⑭** (Bottom)	
	Description	Signal	Pin	Pin	T568B	Pin
	Not used	–	1	1	WH/OR	1
	Fire microphone 2 PTT+ (Push -To-Talk)	PTT2+	2	2	OR	2
	Listen-in audio output 2+	LIST2+	3	3	WH/GR	3
	Listen-in audio output 2-	LIST2-	**4**	**6**	GR	**6**
	Fire Microphone 2 Speak Now LED	S-NOW2	**5**	**4**	BL	**4**
	Not used	–	**6**	**5**	WH/BL	**5**
	Not used	–	7	7	WH/BR	7
	Fire microphone 2 PTT- (Push -To-Talk)	PTT2-	8	8	BR	8
	Screw Terminal ③			Not applicable		
	Description	Signal	Pin			
	Cable screen	SCREEN	1			
	DC supply output (18 – 40 V)	SUPPLY+	2			
	Cable screen	SCREEN	3			
	DC supply output (0 V)	0V	4			
	Cable screen	SCREEN	5			
	DC supply output (18 – 40 V)	SUPPLY+	6			
	Cable screen	SCREEN	7			
	DC supply output (0 V)	0V	8			
ⓘ	An external DC power supply (18 – 40 V) must be connected to screw terminal ① if the external device (microphone) is to be powered from the screw terminal block ③.					

7.3.1.3 BOA01 - Audio Output (1 to 12) Connections

Field Connection				Connection to VIPEDIA-12 (via CAT5 patch lead)			
Screw Terminal ①							
	Description	**Signal**	**Pin**	Not applicable (Connected to screw terminal ③ via the PCB.)			
From external power supply	+V supply input (18 – 40 V) / 500 mA	24 V	1				
	+V supply input (18 – 40 V) / 500 mA	24 V	2				
	0 V supply	0 V	3				
To/From external device	**Screw Terminal** ②			**BOA01's RJ45** (see page 25) ④	**VIPEDIA-12's RJ45** (see page 16) ⑬		
	Description	**Signal**	**Pin**	**Pin**	**T568B**		**Pin**
	Balanced audio output 1 [5, 9] (+ve)	AUDIO OUT 1+ [5, 9]	1	1	WH/OR		1
	As above but –ve	AUDIO OUT 1- [5, 9]	2	2	OR		2
	Balanced audio output 2 [6, 10] (+ve)	AUDIO OUT 2+ [6, 10]	3	3	WH/GR		3
	As above but –ve	AUDIO OUT 2- [6, 10]	4	**6**	GR		**6**
	Balanced audio output 3 [7, 11] (+ve)	AUDIO OUT 3+ [7, 11]	5	**4**	BL		**4**
	As above but –ve	AUDIO OUT 3- [7, 11]	6	**5**	WH/BL		**5**
	Balanced audio output 4 [8, 12] (+ve)	AUDIO OUT 4+ [8, 12]	7	7	WH/BR		7
	As above but –ve	AUDIO OUT 4- [8, 12]	8	8	BR		8
	Screw Terminal ③			Not applicable			
	Description	**Signal**	**Pin**				
	Cable screen	SCREEN	1				
	DC supply output (18 – 40 V)	SUPPLY+	2				
	Cable screen	SCREEN	3				
	DC supply output (0 V)	0V	4				
	Cable screen	SCREEN	5				
	DC supply output (18 – 40 V)	SUPPLY+	6				
	Cable screen	SCREEN	7				
	DC supply output (0 V)	0V	8				

ⓘ
1) An external DC power supply (18 – 40 V) must be connected to screw terminal ① if the external device is to be powered from the screw terminal block ③.
2) Audio Output:
   - Numbers without brackets refer to AUDIO OUTPUTS 1-4 connector
   - Numbers within brackets refer to AUDIO OUTPUTS 5-8 and 9-12 connectors

7.3.1.4 BOA01 - Contact Inputs (1 to 12) Connections

Field Connection				Connection to VIPEDIA-12 (via CAT5 patch lead)			
Screw Terminal ①							
	Description	Signal	Pin	Not applicable (Connected to screw terminal ③ via the PCB.)			
From external power supply	+V supply input (18 – 40 V) / 500 mA	24 V	1				
	+V supply input (18 – 40 V) / 500 mA	24 V	2				
	0 V supply	0 V	3				
	Screw Terminal ②			BOA01's RJ45 (see page 25) ④	VIPEDIA-12's RJ45 (see page16) ⑩		
	Description	Signal	Pin	Pin	Pin	T568B	Pin
To/From external device	Opto-coupled contact 1 [5, 9] (+ve) or Analogue contact 1 [5, 9]	CI1+ [5, 9]	1	1		WH/OR	1
	Opto-coupled contact 1 [5, 9] (-ve)	CI1- [5, 9]	2	2		OR	2
	Opto-coupled contact 2 [6, 10] (+ve) or Analogue contact 2 [6, 10]	CI2+ [6, 10]	3	3		WH/GR	3
	Opto-coupled contact 2 [6, 10] (-ve)	CI2- [6, 10]	**4**	**6**		GR	**6**
	Opto-coupled contact 3 [7, 11] (+ve) or Analogue contact 3 [7, 11]	CI3+ [7, 11]	**5**	**4**		BL	**4**
	Opto-coupled contact 3 [7, 11] (-ve)	CI3- [7, 11]	**6**	**5**		WH/BL	**5**
	Opto-coupled contact 4 [8, 12] (+ve) or Analogue contact 4 [8, 12]	CI4+ [8, 12]	7	7		WH/BR	7
	Opto-coupled contact 4 [8, 12] (-ve)	CI4- [8, 12]	8	8		BR	8
	Screw Terminal ③			Not applicable			
	Description	Signal	Pin				
	Cable screen	SCREEN	1				
	DC supply output (18 – 40 V)	SUPPLY+	2				
	Cable screen	SCREEN	3				
	DC supply output (0 V)	0V	4				
	Cable screen	SCREEN	5				
	DC supply output (18 – 40 V)	SUPPLY+	6				
	Cable screen	SCREEN	7				
	DC supply output (0 V)	0V	8				

ⓘ

1) An external DC power supply (18 – 40 V) must be connected to screw terminal ① if the external device is to be powered from the screw terminal block ③.

2) Contact: Numbers without brackets refer to CONTACTS IN 1-4 connector. Numbers within brackets refer to CONTACTS IN 5-8 and 9-12 connector.

3) Contact is configurable as digital or analogue.

4) EOL resistors for digital contacts can be fitted to the BOA01 in manufacture as required.

7.3.1.5 BOA01 - Contact Outputs (1 to 12) Connections

Field Connection				Connection to VIPEDIA-12 (via CAT5 patch lead)		
Screw Terminal ①						
From external power supply	Description	Signal	Pin	Not applicable (Connected to screw terminal ③ via the PCB.)		
	+V supply input (18 – 40 V) / 500 mA	24 V	1			
	+V supply input (18 – 40 V) / 500 mA	24 V	2			
	0 V supply	0 V	3			
To/From external device	Screw Terminal ②			BOA01's RJ45 (see page 25) ④	VIPEDIA-12's RJ45 (see page 16) ②	
	Description	Signal	Pin	Pin	T568B	Pin
	Open-drain output 1 [7]	Contact 1 [7]	1	1	WH/OR	1
	Open-drain output 2 [8]	Contact 2 [8]	2	2	OR	2
	Open-drain output 3 [9]	Contact 3 [9]	3	3	WH/GR	3
	Open-drain output 4 [10]	Contact 4 [10]	**4**	**6**	GR	**6**
	Open-drain output 5 [11]	Contact 5 [11]	**5**	**4**	BL	**4**
	Open-drain output 6 [12]	Contact 6 [12]	**6**	**5**	WH/BL	**5**
	+ve supply (as 18V-40 V power supply input) for open-drain outputs	+Supply	7	7	WH/BR	7
	+ve supply (as 18V-40 V power supply input) for open-drain outputs	+Supply	8	8	BR	8
	Screw Terminal ③			Not applicable		
	Description	Signal	Pin			
	Cable screen	SCREEN	1			
	DC supply output (18 – 40 V)	SUPPLY+	2			
	Cable screen	SCREEN	3			
	DC supply output (0 V)	0V	4			
	Cable screen	SCREEN	5			
	DC supply output (18 – 40 V)	SUPPLY+	6			
	Cable screen	SCREEN	7			
	DC supply output (0 V)	0V	8			
ⓘ	1) An external DC power supply (18 – 40 V) must be connected to screw terminal ① if the open-drain outputs are to be powered from the screw terminal block ③. 2) Open-drain output: • Numbers without brackets refer to CONTACTS OUT 1-6 connector • Numbers within brackets refer to CONTACTS OUT 7-12 connector					

7.3.1.6   BOA01 - Fault/Voice Alarm/Control Relay and BMB01 Connections

Field Connection				Connection to VIPEDIA-12 (via CAT5 patch lead)		
Screw Terminal ①						
From external power supply	Description	Signal	Pin	Not applicable (Connected to screw terminal ③ via the PCB.)		
	+V supply input (18 – 40 V) / 500 mA	24 V	1			
	+V supply input (18 – 40 V) / 500 mA	24 V	2			
	0 V supply	0 V	3			
To/From external device	**Screw Terminal ②**			**BOA01's RJ45** (see page 25) **④**	**VIPEDIA-12's RJ45** (see page16) **⑪**	
	Description	Signal	Pin	Pin	T568B	Pin
	Fault relay N/C contact	Relay 1 N/C	1	1	WH/OR	1
	Fault relay COM contact	Relay 1 COM	2	2	OR	2
	Fault relay N/O contact	Relay 1 N/O	3	3	WH/GR	3
	Voice Alarm/Control relay N/C contact	Relay 2 N/C	**4**	**6**	GR	**6**
	Voice Alarm/Control relay COM contact	Relay 2 COM	**5**	**4**	BL	**4**
	Voice Alarm/Control relay N/O contact	Relay 2 N/O	**6**	**5**	WH/BL	**5**
	BMB control data / EIA RS485 9600 baud (Data+)	BMB DXP	7	7	WH/BR	7
	As above but Data-	BMB DXN	8	8	BR	8
	Screw Terminal ③			Not applicable		
	Description	Signal	Pin			
	Cable screen	SCREEN	1			
	DC supply output (18 – 40 V)	SUPPLY+	2			
	Cable screen	SCREEN	3			
	DC supply output (0 V)	0V	4			
	Cable screen	SCREEN	5			
	DC supply output (18 – 40 V)	SUPPLY+	6			
	Cable screen	SCREEN	7			
	DC supply output (0 V)	0V	8			
ⓘ	An external DC power supply (18 – 40 V) must be connected to screw terminal ① if the external device (BMB01) is to be powered from the screw terminal block ③.					

7.3.1.7   BOA01 - RS232 Serial Port Connections

Field Connection				Connection to VIPEDIA-12 (via CAT5 patch lead)		
Screw Terminal ①						
	Description	**Signal**	**Pin**	Not applicable (Connected to screw terminal ③ via the PCB.)		
From external power supply	+V supply input (18 – 40 V) / 500 mA	24 V	1			
	+V supply input (18 – 40 V) / 500 mA	24 V	2			
	0 V supply	0 V	3			
	Screw Terminal ②			**BOA01's RJ45** (see page 25) ④	**VIPEDIA-12's RJ45** (see page 16) ⑧	
	Description	**Signal**	**Pin**	**Pin**	**T568B**	**Pin**
	Not connected	–	1	1	WH/OR	1
	RS232 Received Data	RX	2	2	OR	2
	RS232 Transmitted Data	TX	3	3	WH/GR	3
	Not connected	–	**4**	**6**	GR	**6**
	Data Terminal Ready	DTR	**5**	**4**	BL	**4**
To/From external device	Common Ground	GND	**6**	**5**	WH/BL	**5**
	Request To Send	RTS	7	7	WH/BR	7
	Clear To Send	CTS	8	8	BR	8
	Screw Terminal ③			Not applicable		
	Description	**Signal**	**Pin**			
	Cable screen	SCREEN	1			
	DC supply output (18 – 40 V)	SUPPLY+	2			
	Cable screen	SCREEN	3			
	DC supply output (0 V)	0V	4			
	Cable screen	SCREEN	5			
	DC supply output (18 – 40 V)	SUPPLY+	6			
	Cable screen	SCREEN	7			
	DC supply output (0 V)	0V	8			
ⓘ	An external DC power supply (18 – 40 V) must be connected to screw terminal ① if the external device is to be powered from the screw terminal block ③.					

7.3.1.8   BOA01 - AMP CTRL Port Connections

Field Connection				Connection to VIPEDIA-12 (via CAT5 patch lead)			
Screw Terminal ①							
From external power supply	Description	Signal	Pin	Not applicable (Connected to screw terminal ③ via the PCB.)			
	+V supply input (18 – 40 V) / 500 mA	24 V	1				
	+V supply input (18 – 40 V) / 500 mA	24 V	2				
	0 V supply	0 V	3				
To/From external device	Screw Terminal ②			BOA01's RJ45 (see page 25) ④		VIPEDIA-12's RJ45 (see page 16) ⑨	
	Description	Signal	Pin	Pin	T568B		Pin
	Controller Area Network (High)	CAN_H	1	1	WH/OR		1
	Controller Area Network (Low)	CAN_L	2	2	OR		2
	0 V Reference	GND	3	3	WH/GR		3
	0 V Reference	GND	4	6	GR		6
	Audio Monitor Bus (–10 dBu nominal) (+ve)	AUDIO MON+	5	4	BL		4
	As above but –ve	AUDIO MON-	6	5	WH/BL		5
	Amplifier control data / EIA RS485 9600 baud (Data+)	DXP	7	7	WH/BR		7
	As above but Data-	DXN	8	8	BR		8
	Screw Terminal ③			Not applicable			
	Description	Signal	Pin				
	Cable screen	SCREEN	1				
	DC supply output (18 – 40 V)	SUPPLY+	2				
	Cable screen	SCREEN	3				
	DC supply output (0 V)	0V	4				
	Cable screen	SCREEN	5				
	DC supply output (18 – 40 V)	SUPPLY+	6				
	Cable screen	SCREEN	7				
	DC supply output (0 V)	0V	8				

ⓘ An external DC power supply (18 – 40 V) must be connected to screw terminal ① if the external device is to be powered from the screw terminal block ③.

7.3.1.9   BOA01 - Aggregating Audio Input (up to 4) Connections

Field Connection				Connection to VIPEDIA-12 (via CAT5 patch lead)				
Screw Terminal ①								
	Description	**Signal**	**Pin**	Not applicable (Connected to screw terminal ③ via the PCB.)				
From external power supply	+V supply input (18 – 40 V) / 500 mA	24 V	1					
	+V supply input (18 – 40 V) / 500 mA	24 V	2					
	0 V supply	0 V	3					
	Screw Terminal ②			**BOA01's RJ45** (see page 25)			**VIPEDIA-12's RJ45** (see page 16)	
	Description	**Signal**	**Pin**	**RJ45**	**Pin**	**T568B**	**RJ45**	**Pin**
To/From external device	Balanced audio input 1+	AUDIO IN+	1	⑤	1	WH/OR	⑫	1
	Balanced audio input 1-	AUDIO IN-	2		2	OR	Any available I/P	2
	Balanced audio input 2+	AUDIO IN+	3	⑥	1	WH/OR	⑫	1
	Balanced audio input 2-	AUDIO IN-	4		2	OR	Any available I/P	2
	Balanced audio input 3+	AUDIO IN+	5	⑦	1	WH/OR	⑫	1
	Balanced audio input 3-	AUDIO IN-	6		2	OR	Any available I/P	2
	Balanced audio input 4+	AUDIO IN+	7	⑧	1	WH/OR	⑫	1
	Balanced audio input 4-	AUDIO IN-	8		2	OR	Any available I/P	2
	Screw Terminal ③			Not applicable				
	Description	**Signal**	**Pin**					
	Cable screen	SCREEN	1					
	DC supply output (18 – 40 V)	SUPPLY+	2					
	Cable screen	SCREEN	3					
	DC supply output (0 V)	0V	4					
	Cable screen	SCREEN	5					
	DC supply output (18 – 40 V)	SUPPLY+	6					
	Cable screen	SCREEN	7					
	DC supply output (0 V)	0V	8					
ⓘ	An external DC power supply (18 – 40 V) must be connected to screw terminal ① if the external device is to be powered from the screw terminal block ③.							

7.3.2   BOA02 Connections
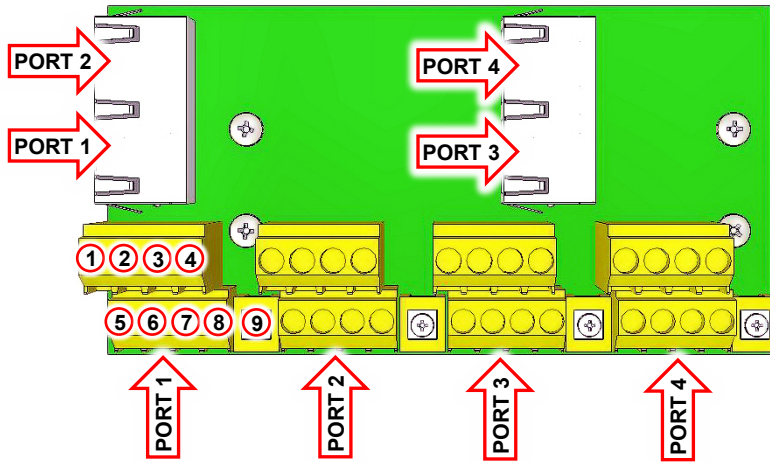
Screw-in Terminals	RJ45		
		Pin	T568-B
Rear	1	1	WH/OR
	2	2	OR
	3	3	WH/GR
	4	**6**	GR
Front	**5**	**4**	BL
	6	**5**	WH/BL
	7	7	WH/BR
	8	8	BR
9 (SCREEN)		-	
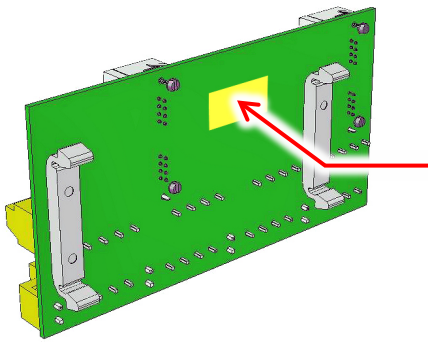
For EMC compliance, ensure that 20 mm length of EMC gasket[1] (provided) is fixed to the gold-plated PCB land.

Ensure that its compression to 5 mm high (to DIN rail) does not connect to other tracks on the PCB.

[1]   Wurth EMC gasket PN 3031010

7.3.2.1   BOA02 - Audio Input and Serial Interface (1 to 12) Connections

Field Connection				Connection to VIPEDIA-12 (via CAT5 patch lead)		
Screw Terminal				BOA02's RJ45 (see page 36) PORT 1 to 4	VIPEDIA-12's RJ45 (see page 16) ⑫ INPUTS 1 to 12	
	Description	Signal	Pin	Pin	T568B	Pin
To/From external device (e.g. ASL microphone)	Balanced audio input+	AUDIO IN+	1	1	WH/OR	1
	Balanced audio input-	AUDIO IN-	2	2	OR	2
	RS485 data+	DXP	3	3	WH/GR	3
	RS485 data-	DXN	**4**	**6**	GR	**6**
	DC supply output (18 – 40 V)	+SUPPLY	**5**	**4**	BL	**4**
	DC supply output (18 – 40 V)	+SUPPLY	**6**	**5**	WH/BL	**5**
	DC supply output (0 V)	0V	7	7	WH/BR	7
	DC supply output (0 V)	0V	8	8	BR	8

7.3.2.2 BOA02 - Auxiliary Microphone Interface Connections (Hardware Bypass Emergency Microphone PPT and Speak Now and Listen-in)

7.3.2.2.1 BOA02 - Auxiliary Microphone Interface 1 (MIC AUX 1)

Field Connection					Connection to VIPEDIA-12 (via CAT5 patch lead)		
To/From external device	Screw Terminal				BOA02's RJ45 (see page 36) PORT **1** to **4**	VIPEDIA-12's RJ45 (see page 16) ⑭ (Top)	
	Description	Signal	Pin	Pin	Pin	T568B	Pin
	Fire microphone 2 PTT+ (Push-To-Talk)	PTT2+	1	1		WH/OR	1
	Fire microphone 1 PTT+ (Push -To-Talk)	PTT1+	2	2		OR	2
	Listen-in audio output 1+	LIST1+	3	3		WH/GR	3
	Listen-in audio output 1-	LIST1-	**4**	**6**		GR	**6**
	Fire Microphone 1 Speak Now LED	S-NOW1	**5**	**4**		BL	**4**
	Fire Microphone 2 Speak Now LED	S-NOW2	**6**	**5**		WH/BL	**5**
	Fire microphone 2 PTT- (Push -To-Talk)	PTT2-	7	7		WH/BR	7
	Fire microphone 1 PTT- (Push -To-Talk)	PTT1-	8	8		BR	8

7.3.2.2.2 BOA02 - Auxiliary Microphone Interface 2 (MIC AUX 2)

Field Connection					Connection to VIPEDIA-12 (via CAT5 patch lead)		
To/From external device	Screw Terminal				BOA02's RJ45 (see page 36) PORT **1** to **4**	VIPEDIA-12's RJ45 (see page 16) ⑭ (Bottom)	
	Description	Signal	Pin	Pin	Pin	T568B	Pin
	Not used	–	1	1		WH/OR	1
	Fire microphone 2 PTT+ (Push -To-Talk)	PTT2+	2	2		OR	2
	Listen-in audio output 2+	LIST2+	3	3		WH/GR	3
	Listen-in audio output 2-	LIST2-	**4**	**6**		GR	**6**
	Fire Microphone 2 Speak Now LED	S-NOW2	**5**	**4**		BL	**4**
	Not used	–	**6**	**5**		WH/BL	**5**
	Not used	–	7	7		WH/BR	7
	Fire microphone 2 PTT- (Push -To-Talk)	PTT2-	8	8		BR	8

7.3.2.3 BOA02 - Audio Output (1 to 12) Connections

Field Connection					Connection to VIPEDIA-12 (via CAT5 patch lead)		
To/From external device	Screw Terminal				BOA02's RJ45 (see page 36) PORT 1 to 4		VIPEDIA-12's RJ45 (see page16) ⑬
	Description	Signal	Pin	Pin	T568B	Pin
	Balanced audio output 1 [5, 9] (+ve)	AUDIO OUT 1+ [5, 9]	1	1	WH/OR	1
	As above but –ve	AUDIO OUT 1- [5, 9]	2	2	OR	2
	Balanced audio output 2 [6, 10] (+ve)	AUDIO OUT 2+ [6, 10]	3	3	WH/GR	3
	As above but –ve	AUDIO OUT 2- [6, 10]	**4**	**6**	GR	**6**
	Balanced audio output 3 [7, 11] (+ve)	AUDIO OUT 3+ [7, 11]	**5**	**4**	BL	**4**
	As above but –ve	AUDIO OUT 3- [7, 11]	**6**	**5**	WH/BL	**5**
	Balanced audio output 4 [8, 12] (+ve)	AUDIO OUT 4+ [8, 12]	7	7	WH/BR	7
	As above but –ve	AUDIO OUT 4- [8, 12]	8	8	BR	8

ⓘ Audio Output:
- Numbers without brackets refer to AUDIO OUTPUTS 1-4 connector
- Numbers within brackets refer to AUDIO OUTPUTS 5-8 and 9-12 connectors

7.3.2.4 BOA02 - Contact Inputs (1 to 12) Connections

Field Connection					Connection to VIPEDIA-12 (via CAT5 patch lead)		
To/From external device	Screw Terminal				BOA02's RJ45 (see page 36) PORT 1 to 4		VIPEDIA-12's RJ45 (see page16) ⑩
	Description	Signal	Pin	Pin	T568B	Pin
	Opto-coupled contact 1 [5, 9] (+ve) or Analogue contact 1 [5, 9]	CI1+ [5, 9]	1	1	WH/OR	1
	Opto-coupled contact 1 [5, 9] (-ve)	CI1- [5, 9]	2	2	OR	2
	Opto-coupled contact 2 [6, 10] (+ve) or Analogue contact 2 [6, 10]	CI2+ [6, 10]	3	3	WH/GR	3
	Opto-coupled contact 2 [6, 10] (-ve)	CI2- [6, 10]	**4**	**6**	GR	**6**
	Opto-coupled contact 3 [7, 11] (+ve) or Analogue contact 3 [7, 11]	CI3+ [7, 11]	**5**	**4**	BL	**4**
	Opto-coupled contact 3 [7, 11] (-ve)	CI3- [7, 11]	**6**	**5**	WH/BL	**5**
	Opto-coupled contact 4 [8, 12] (+ve) or Analogue contact 4 [8, 12]	CI4+ [8, 12]	7	7	WH/BR	7
	Opto-coupled contact 4 [8, 12] (-ve)	CI4- [8, 12]	8	8	BR	8

ⓘ 1) Contact: Numbers without brackets refer to CONTACTS IN 1-4 connector. Numbers within brackets refer to CONTACTS IN 5-8 and 9-12 connector.
2) Contact is configurable as digital or analogue.

7.3.2.5 BOA02 - Contact Outputs (1 to 12) Connections

Field Connection				Connection to VIPEDIA-12 (via CAT5 patch lead)		
	Screw Terminal			**BOA02's RJ45** (see page 36) **PORT 1** to **4**	**VIPEDIA-12's RJ45** (see page 16) ②	
	Description	Signal	Pin	Pin	T568B	Pin
To/From external device	Open-drain output 1 [7]	Contact 1 [7]	1	1	WH/OR	1
	Open-drain output 2 [8]	Contact 2 [8]	2	2	OR	2
	Open-drain output 3 [9]	Contact 3 [9]	3	3	WH/GR	3
	Open-drain output 4 [10]	Contact 4 [10]	**4**	**6**	GR	**6**
	Open-drain output 5 [11]	Contact 5 [11]	**5**	**4**	BL	**4**
	Open-drain output 6 [12]	Contact 6 [12]	**6**	**5**	WH/BL	**5**
	+ve supply (as 18V-40 V power supply input) for open-drain outputs	+Supply	7	7	WH/BR	7
	+ve supply (as 18V-40 V power supply input) for open-drain outputs	+Supply	8	8	BR	8
ⓘ	Open-drain output: • Numbers without brackets refer to CONTACTS OUT 1-6 connector • Numbers within brackets refer to CONTACTS OUT 7-12 connector					

7.3.2.6 BOA02 - Fault/Voice Alarm/Control Relay and BMB01 Connections

Field Connection				Connection to VIPEDIA-12 (via CAT5 patch lead)		
	Screw Terminal			**BOA02's RJ45** (see page 36) **PORT 1** to **4**	**VIPEDIA-12's RJ45** (see page 16) ⑪	
	Description	Signal	Pin	Pin	T568B	Pin
To/From external device	Fault relay N/C contact	Relay 1 N/C	1	1	WH/OR	1
	Fault relay COM contact	Relay 1 COM	2	2	OR	2
	Fault relay N/O contact	Relay 1 N/O	3	3	WH/GR	3
	Voice Alarm/Control relay N/C contact	Relay 2 N/C	**4**	**6**	GR	**6**
	Voice Alarm/Control relay COM contact	Relay 2 COM	**5**	**4**	BL	**4**
	Voice Alarm/Control relay N/O contact	Relay 2 N/O	**6**	**5**	WH/BL	**5**
	BMB control data / EIA RS485 9600 baud (Data+)	BMB DXP	7	7	WH/BR	7
	As above but Data-	BMB DXN	8	8	BR	8

7.3.2.7 BOA02 - RS232 Serial Port Connections

Field Connection				Connection to VIPEDIA-12 (via CAT5 patch lead)		
Screw Terminal				BOA02's RJ45 (see page 36) PORT **1** to **4**		VIPEDIA-12's RJ45 (see page 16) ⑧
	Description	Signal	Pin	Pin	T568B	Pin
To/From external device	Not connected	–	1	1	WH/OR	1
	RS232 Received Data	RX	2	2	OR	2
	RS232 Transmitted Data	TX	3	3	WH/GR	3
	Not connected	–	**4**	**6**	GR	**6**
	Data Terminal Ready	DTR	**5**	**4**	BL	**4**
	Common Ground	GND	**6**	**5**	WH/BL	**5**
	Request To Send	RTS	7	7	WH/BR	7
	Clear To Send	CTS	8	8	BR	8

7.3.2.8 BOA02 - AMP CTRL Port Connections

Field Connection				Connection to VIPEDIA-12 (via CAT5 patch lead)		
Screw Terminal				BOA02's RJ45 (see page 36) PORT **1** to **4**		VIPEDIA-12's RJ45 (see page 16) ⑨
	Description	Signal	Pin	Pin	T568B	Pin
To/From external device	Controller Area Network (High)	CAN_H	1	1	WH/OR	1
	Controller Area Network (Low)	CAN_L	2	2	OR	2
	0 V Reference	GND	3	3	WH/GR	3
	0 V Reference	GND	**4**	**6**	GR	**6**
	Audio Monitor Bus (–10 dBu nominal) (+ve)	AUDIO MON+	**5**	**4**	BL	**4**
	As above but –ve	AUDIO MON-	**6**	**5**	WH/BL	**5**
	Amplifier control data / EIA RS485 9600 baud (Data+)	DXP	7	7	WH/BR	7
	As above but Data-	DXN	8	8	BR	8

7.4   EMS/MPS Fire Microphone Connections

EMS/MPS - Fire Microphone Connection to VIPEDIA-12 INPUT 1 (A and A&B Routers)

EMS/MPS - Fire Microphone Connection to VIPEDIA-12 INPUT 2 (A and A&B Routers)

EMS/MPS

ROUTER 1   **T568B:**

EMS/MPS ROUTER 1	Wire	VIPEDIA-12 (A) AUDIO INPUT 2 (RJ45)
AUDIO+	WH/OR	(1) AUDIO IN+
AUDIO-	OR	(2) AUDIO IN-
RS485 DXP / DATA DXP	WH/GR	(3) DXP
+SUPPLY	BL	(4) +SUPPLY
+SUPPLY	WH/BL	(5) +SUPPLY
RS485 DXN	GR	(6) DXN
0V SUPPLY	WH/BR	(7) 0V
0V SUPPLY	BR	(8) 0V

EXTERNAL POWER SUPPLY 1 (15 - 40 V) (e.g. AUX OUT of ASL Amplifier Mainframe)

A and A&B

MIC AUX 2 (RJ45)
(1) -
(2) PTT2+
(3) LIST2+
(4) S-NOW2
(5) -
(6) LIST2-
(7) -
(8) PTT2-

RTR. AUX

RTR. AUX	Wire
ROUTER 2 PTT+ / PTT-2+	WH/OR
ROUTER 1 PTT+ / PTT-1+	OR
LISTEN IN+	WH/GN
ROUTER 1 S/NOW / SPEAK NOW LED-1	BL
ROUTER 2 S/NOW / SPEAK NOW LED-2	WH/BL
LISTEN IN-	GR
PTT GND	
PTT GND	BR

VIPEDIA-12 (B)

MIC AUX 2 (RJ45)
(1) -
(2) PTT2+
(3) LIST2+
(4) S-NOW2
(5) -
(6) LIST2-
(7) -
(8) PTT2-

A&B only

ROUTER 2

EMS/MPS ROUTER 2	Wire	VIPEDIA-12 (B) AUDIO INPUT 2 (RJ45)
AUDIO+	WH/OR	(1) AUDIO IN+
AUDIO-	OR	(2) AUDIO IN-
RS485 DXP / DATA DXP	WH/GR	(3) DXP
+SUPPLY	BL	(4) +SUPPLY
+SUPPLY	WH/BL	(5) +SUPPLY
RS485 DXN / DATA DXN	GR	(6) DXN
0V SUPPLY	WH/BR	(7) 0V
0V SUPPLY	BR	(8) 0V

EXTERNAL POWER SUPPLY 2 (15 - 40 V) (as required) (e.g. a 3 A output of the ASL BDISTxx)

7.5 EAP01 Fire Microphone Connections

EAP01 - Connection to VIPEDIA-12 INPUT 1

EAP01

EAP01	Pin		T568B:	VIPEDIA-12
				AUDIO INPUT 1 (RJ45)
			WH/OR	(1) AUDIO IN+
			OR	(2) AUDIO IN-
			WH/GR	(3) DXP
AUDIO+	1			(4) +SUPPLY
AUDIO-	2			(5) +SUPPLY
DATA-DXP	3		GR	(6) DXN
DATA-DXN	4	*(a)*		(7) 0V
+24V INPUT	5		BR	(8) 0V
0V INPUT	6			

EXTERNAL POWER SUPPLY (18 - 40 V)
(e.g. AUX OUT of ASL Amplifier Mainframe)

EAP01	Pin			VIPEDIA-12
				MIC AUX 1 (RJ45)
SCREEN				(1) PTT2+
PTT+	7		OR	(2) PTT1+
PTT-	8			(3) LIST1+
COMMON LED +	9		BL	(4) S-NOW1
SPEAK NOW LED -	10			(5) S-NOW2
FAULT LED -	11			(6) LIST1-
SCREEN			BR	(7) PTT2-
				(8) PTT1-

			VIPEDIA-12
			CONTROL (RJ45)
		WH/OR	(1) RELAY 1 N/C
		OR	(2) RELAY 1 COM
	(b)		(3) RELAY 1 N/O
			(4) RELAY 2 COM
			(5) RELAY 2 N/O
			(6) RELAY 2 N/C
			(7) BMB DXP
			(8) BMB DXN

(a) DATA-DXP and DATA-DXN only required for optional Busy indicator.

(b) RELAY 1 COM: to any common ground connection point.
VIPEDIA-12 should be a fault master for global fault indication.

EAP01 - Connection to VIPEDIA-12 INPUT 2

EAP01

VIPEDIA-12

T568B:

AUDIO INPUT 2 (RJ45)

AUDIO+	1	WH/OR → (1) AUDIO IN+
AUDIO-	2	OR → (2) AUDIO IN-
DATA-DXP	3	WH/GR → (3) DXP
DATA-DXN	4	(4) +SUPPLY
+24V INPUT	5	(5) +SUPPLY
0V INPUT	6	GR → (6) DXN
SCREEN		(7) 0V
PTT+	7	BR → (8) 0V

(a)

EXTERNAL
POWER SUPPLY (18 - 40 V)
(e.g. AUX OUT of
ASL Amplifier Mainframe)

MIC AUX 2 (RJ45)

(1) -
OR → (2) PTT2+
(3) LIST2+
BL → (4) S-NOW2
(5) -
(6) LIST2-
(7) -
BR → (8) PTT2-

PTT-	8
COMMON LED +	9
SPEAK NOW LED -	10
FAULT LED -	11
SCREEN	

CONTROL (RJ45)

WH/OR → (1) RELAY 1 N/C
OR → (2) RELAY 1 COM

(b)

(3) RELAY 1 N/O
(4) RELAY 2 COM
(5) RELAY 2 N/O
(6) RELAY 2 N/C
(7) BMB DXP
(8) BMB DXN

(a) DATA-DXP and DATA-DXN only required for optional Busy indicator.

(b) RELAY 1 COM: to any common ground connection point.
VIPEDIA-12 should be a fault master for global fault indication.

7.6 Expansion Unit Connection

8   Technical Specification

General

Power Supply...dual 18 V to 40 V DC (2 A)

Current Consumption at 24 V DC

    VIPEDIA-12 (excluding optional modules, microphones and other peripherals)

        Minimum (LCD display backlight off, LEDs off and sounder off).. 445 mA

        Maximum (LCD display backlight on, LEDs on and sounder on)..490 mA[1]

    Network Card... Additional 145 mA

    Dante Brooklyn II Module .... Additional 60 mA

    SFP Module .... Additional 30 mA per module

Built-in DVA Storage[2] .... DVA storage (up to 63 messages)

                    48 kHz 16 bit mono WAV files (10 minutes audio time)

                    24 kHz 16 bit mono WAV files (20 minutes audio time)

                    12 kHz 16 bit mono WAV files (40 minutes audio time)

Real Time Clock (RTC)... Built-in (externally synchronisable)

Front Panel Display and Indicators..................................... EN 54-16, ISO 7240-16 and BS 5839-8 compliant

IP Connectivity ....2 x 100BASE-T Ethernet (RJ45) (standard)

  2 x 100BASE-T Ethernet (RJ45) + 2 x 1 GigE SFP[3] Modules (RJ45 or MM/SM fibre) (on the Network Card)

Temperature .... -20°C to +55°C (storage) / -10°C to +55°C (operation)

Humidity Range .... 0% to 93% non-condensing

IP Rating IP20

Dimensions (H x W x D) ....41.8 mm (1U) x 436 mm x 260 mm (excluding handles) / 19-inch rack mounting

Weight...3.75 kg

Optional Modules (see Part Codes)

Network Card (factory fit)... Audio over IP (PMC) and additional IP connectivity

                    1 x USB OTG for diagnostic purposes (USB Micro-AB)

         Optional ASL VIPA software suite applications[4] such as DVA and TTS (Text To Speech)

Dante Brooklyn II Module (factory fit) .... Dante™ capability via Audinate® Brooklyn II module[5]

Terminal Server (factory fit) ....TCP/IP to serial protocol conversion

SFP Modules (1 GigE) [6] .... MM (multimode fibre) module / LC duplex

                    SM (single mode fibre) module / LC duplex

                    RJ45 (copper) module

Part Codes[7]

VIPEDIA-12 ....VIPEDIA-12 without Network Card fitted

VIPEDIA-12-NET ....VIPEDIA-12 with Network Card fitted

VIPEDIA-12-PRO ....VIPEDIA-12 with Network Card and Dante Brooklyn II module fitted

VIPEDIA-12-TS1... VIPEDIA-12 with Terminal Server fitted

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[1] LCD backlight current consumption: approx. 10 mA.

[2] 24 kHz and 12 kHz DVAs require software version V3.2.0.2 (or later).

[3] SFP modules: refer to ASL for availability and compatibility.

[4] VIPA applications: refer to ASL for availability and compatibility.

[5] Audinate® is a registered trademark of Audinate Pty Ltd.

   Dante™ is a trademark of Audinate Pty Ltd.

[6] SFP modules: refer to ASL for availability and compatibility.

[7] Refer to ASL for latest product list and part codes.

Interfaces

Contact Inputs... 12 x combined digital[1] and analogue[2] contact inputs

Contact Outputs[3] .... 12 x open-drain contact outputs

Audio-CAN Port .... 1 x port for connection to ASL V400 and X400 Amplifier Mainframes

Changeover Relays .... 1 x fault relay[4] / 1 x Voice Alarm active or Control relay[5]

RS232 Port .... 1 x port for general and legacy control purposes (115200 baud)

RS485 Port .... 1 x port for ASL BMB01 Remote I/O Unit (9600 baud)
12 x ports for microphones (19200 baud), Host Protocol (9600 baud) or GPS (4800 to115200 baud)[6]

Expansion Ports......................... 2 x ports to support the DBB (Digital BackBone) high speed digital audio bus

Audio Input and Outputs

Audio Input Channels – Analogue .... 12 x balanced audio input ports
Monitored universal microphone or line on all inputs
DANS on all inputs
Hardware Bypass Emergency Microphone Interface on two ports (inputs 1 and 2)
Phantom power on all ports (48 V)

Audio Output Channels – Analogue .... 12 x balanced audio outputs
Dual monitored and isolated A and B audio output channels on separate connectors

Listen-in Audio Output Channels – Analogue .... 2 x balanced audio outputs

Audio over IP (requires Network Card)[7] .... ASL PMC format
Dante™ via Audinate® Brooklyn II module

Audio Performance – General

Digital Audio I/O... 24-bits 48 kHz
Internal and Expansion Bus.. 32 bits floating point
Gain Control...Input / Output / External volume control
THD Input to Output... < 0.01% at 1 kHz
Crosstalk ....> 70 dB below full output at 1 kHz
Residual Noise.. < -90 dBu (A)
Frequency Response (input to output) .... 20 Hz to 20 kHz ±0.5 dB
Ambient Noise Sensing .... Programmable output level control
Night Volume Control.. Daily time controlled

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[1] Digital contact inputs: opto-coupled interfaces for level conversion with built-in resistor to suit voltages of +12 to +40 V.
The opto-coupled interfaces provide an internal resistance to ground of approximately 100 kΩ which may cause Fire Alarm Panels connected via the voltage-reversal method to report earth leakage faults.
For all applications that require a voltage-reversal interface with the Fire Alarm Panel, ASL recommend that an ASL BMB01 Remote I/O Unit is used in order to avoid the possibility of earth leakage faults being reported by the Fire Alarm Panel.

[2] Analogue contact inputs (software version V2.1 or later):
- Internal 4k7Ω pull-up to +7 V
- Non-monitored mode: 0 to 3.3 V = contact closed / > 3.3 V = contact open
- Monitored mode: >4.9 V = fault / 1.1 V to 4.9 V = contact closed / 0.3 V to 1.1 V = contact open / <0.3 V = fault

[3] Contact outputs:
- Maximum Rated Current per output: 350 mA
- Maximum Voltage per output: 60 V

[4] Fault relay: NO contacts closed in normal operation, open on fault.

[5] Voice Alarm relay (non-redundant systems): NO contacts open in normal operation, closed on Voice Alarm.
Control relay (redundant systems): NO contacts open in normal operation, closed on critical fault in the other redundant unit. For use with RCB01 Changeover Relay Box. Refer to ASL for availability and compatibility.

[6] Host Protocol / GPS: either a Host Protocol device or a GPS device can be connected to one of the microphone RS485 ports.
GPS not supported on software version V4.2.0.1 (or later).

[7] Software version V4.2.0.2 (may be subtly different on earlier or later versions):
- Up to 12 x PMC streams (6 x in + 6 x out) depending on system design and configuration.
- VIPEDIA-12-PRO: Up to 32 x Dante Rx channels per PAVA system.
Vipedia audio inputs (1 to 12) and outputs (1 to 4) permanently available on Dante Tx channels. Vipedia outputs 5 to 12 may be available on Dante Tx channels depending on system design and configuration.

Audio Input Performance[1]

Input Sensitivity... -60 / -40 / -20 / 0 dBu
Input Overload .... +20 dB
Maximum Input Level.. +20 dBu
Input Trim ....–90 dB to +10 dB (1 dB steps)
Mute ....Click free
Phase Invert...on/off
Surveillance Tone Detection....................................... Frequency Range: 20 Hz to 30 Hz / Level: -60 to 0 dB
Switchable High-Pass Filter... Frequency: 20 to 500 Hz / Slope: 12 dB/oct
4-band Parametric EQ

    Low ....Frequency: 10 to 1 kHz (1 Hz steps) / Range: ±18 dB (0.1 dB steps)
        Slope: 6 dB to 12 dB/octave (shelf only) / HPF / Shelving Switch

    Low-Mid ....Frequency: 20 Hz to 20 kHz (1 Hz steps) / Range: ±18 dB (0.1 dB steps) / Q:1.0 to 5.0

    High-Mid ....Frequency: 20 Hz to 20 kHz (1 Hz steps) / Range: ±18 dB (0.1 dB steps) / Q:1.0 to 5.0

    High ....Frequency: 1 kHz to 20 kHz (100 Hz steps) / Range: ±18 dB (0.1 dB steps)
        Slope: 6 dB to 12 dB/octave (shelf only) / LPF / Shelving Switch

    EQ Bypass Switch ....on / off

Gate

    Threshold...-60 dB to +20 dB (1 dB steps)
    Attack ....0.1 to 200 ms 0.1 ms steps)
    Release ....50 ms to 3 s (1 ms steps)
    Hold ....25 ms to 5 s (1 ms steps)
    Gate Bypass Switch ....on/off

Compressor

    Ratio .... 1:1 to ∞:1
    Threshold...-60 dB to +20 dB (1 dB steps)
    Attack ....0.1 to 200 ms (0.1 ms steps)
    Release ....50 ms to 3 s (1 ms steps)
    Make Up Gain.. 0 to +20 dB (0.1 dB steps)
    Knee .... 0 to +12 dB (0.1 dB steps)
    Peak / True RMS Mode .... Switchable
    Compressor Bypass Switch...on/off

Peak Limiter

    Threshold...-60 dB to +20 dB (1 dB steps)
    Attack ....0.1 to 200 ms (0.1 ms steps)
    Hold ....25 ms to 5 s (1 ms steps)
    Make Up Gain.. 0 to +20 dB (0.1 dB steps)
    Release ....50 ms to 3 s (1 ms steps)
    Limiter Bypass Switch ....on/off

Channel Fader ....-90 dB to +10 dB (1 dB steps)

Chime Generator

    Selectable Type .... OFF / 1-note (660 Hz) / 2-note (660/554 Hz) / 3-note (660/554/440 Hz) / Custom
    Level ....-60 dB to +10 dB (1 dB steps)

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[1] Software version V4.2.0.2 (may be subtly different on earlier or later versions).

Audio Output Performance[1]

Nominal Output Level .... 0 dBu

Maximum Output Level .... +20 dBu

Output Impedance ....660 Ω

Routing Switches ....To select any of input audio sources to the output channel

Mixing[2] .... Up to 16 simultaneous input sources

Master Level .... +10 to -90 dB (1 dB steps)

Night Volume Capping... Selectable level and programmable times

Output Mute ....Click free

Delay .... 1 ms to 5000 ms (1 ms steps)

10-band Parametric Equaliser

Low (Band-1) ....Frequency: 20 to 1 kHz (1 Hz steps) / Range: ±18 dB (0.1 dB steps)
Slope: 6 dB to 12 dB/octave (shelf only) / HPF / Shelving Switch

Band (2-9)...............Frequency: 20 Hz to 20 kHz (1 Hz steps) / Range: ±18dB (0.1 dB steps) / Q:1.0 to 5.0

High (Band-10) ....Frequency: 1 to 12 kHz (100 Hz steps) / Range: ±18dB (0.1 dB steps)
Slope: 6 dB to 12 dB/octave (shelf only) / LPF / Shelving Switch

EQ Bypass Switch ....on / off

Surveillance Tone Generators

Low Frequency ....20 Hz / 30 Hz

High Frequency .... 20 kHz / 24 kHz

Level ....-60 dB to +10 dB (1 dB steps)

Mode... Continuous / Pulsed / Off

Pulse Interval ....20 s to 100 s

Pulse Width...1 s to 10 s

Pulse Offset ....0 s to 99 s

Override Gain (Hardware Bypass) ....-31.5 dB to 0 dB (1 dB steps)

Peak Limiter

Threshold..-60 dB to +20 dB (1 dB steps)

Attack..0.1 to 200 ms (0.1 ms steps)

Hold ....25 ms to 5 s (1 ms steps)

Make Up Gain .... 0 to +20 dB (0.1 dB steps)

Release..50 ms to 3 s (1 ms steps)

Limiter Bypass Switch ....on/off

Hard Clipper...Fixed or dynamic hard-clip level (0 to 20 dB)

Ambient Noise Sensor (ANS)

Technique ....ASL Proprietary Sample-Hold Technique and Dynamic ANS (DANS[3])

Ambient Noise Sensing Gain Adjustment.. -40 dB to 0 dB

Number of Auxiliary Compensation Sources for DANS 4

ANS Minimum Threshold / ANS Maximum Threshold ....55 dBA / 95 dBA

Bypass Switch ....on / off

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[1] Software version V4.2.0.2 (may be subtly different on earlier or later versions).

[2] Mixer used for listen-in only at the time of publication of this document.

[3] V3.3.2.0 (or later): DANS is limited to local outputs 1 to 12.
Versions earlier than V3.3.2.0: DANS is limited to local outputs 1 to 4.

9 Mechanical Dimensions

Figure 1   Mechanical dimensions

436 mm

approx 493 mm (including handles)

260 mm

approx 290 mm (including handles)

41.8 mm

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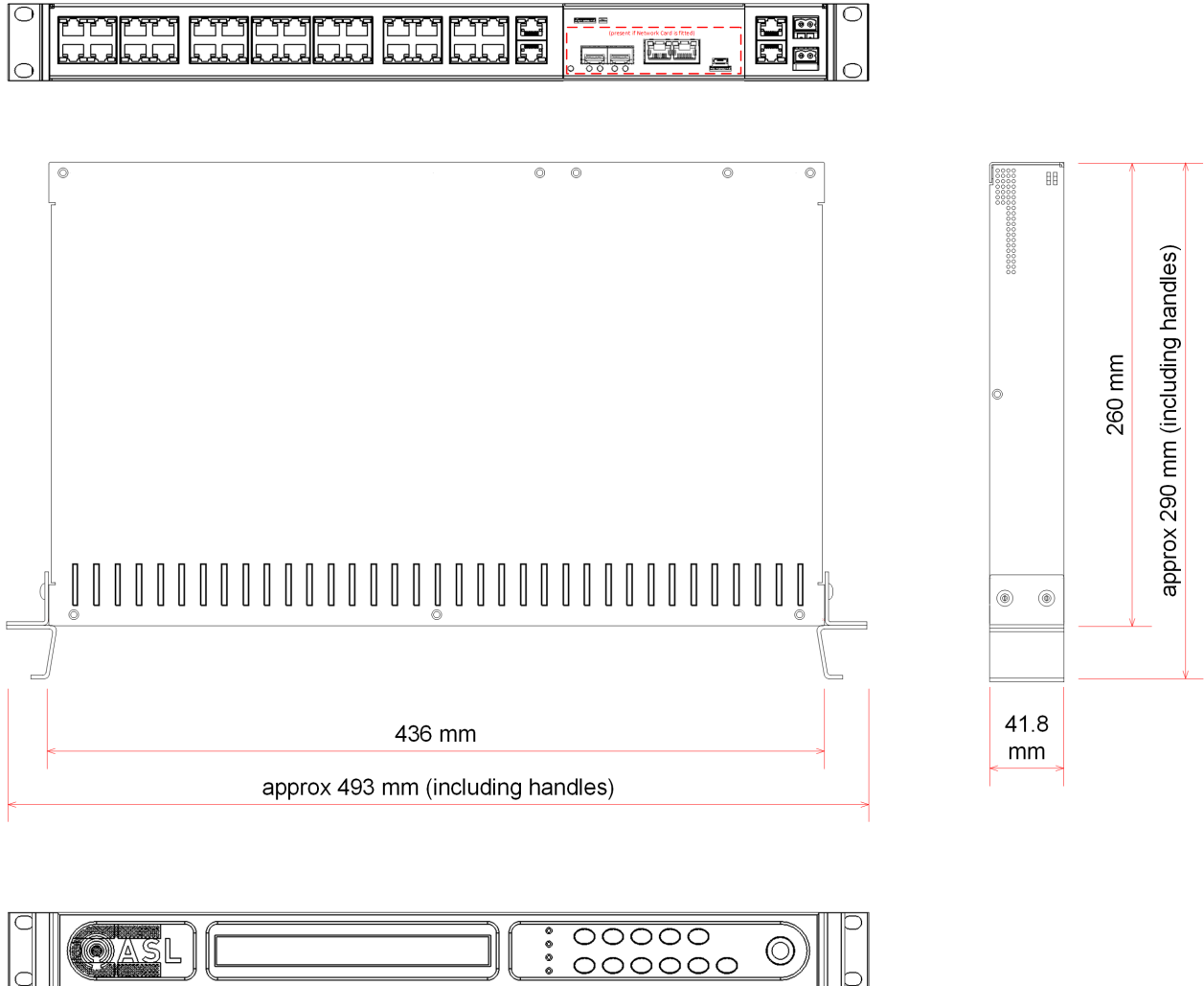
1) ASL recommend a rear clearance depth of at least 110 mm for cabling.

   A 19-inch standard rack with 600 mm depth provides the required room for installation including the rear cabling.

2) In order for customers to produce their own site documentation drawings of the front and rear panel are available from ASL.

10 Storage and Preservation

This product should be packed for storage in the original packing as described in the Section "10 Packing for Return" below and stored in the following environmental conditions:

- Away from harsh environmental conditions, such as areas that are subject to corrosive atmosphere, excessive moisture or may allow water or other liquids to come into contact with the unit or its external connections.

- In a heated and humidity controlled storage areas where the temperature and humidity are within the equipment specification.

11 Packing for Return

This product contains static-sensitive devices. Observe ESD precautions when handling this product with the cover removed.

If a product is being returned for servicing, try to use the containers and materials of the original packaging. Attach a tag indicating the type of service required, return address, equipment type and full serial number.

If the original packing can no longer be used, the following general instructions should be used for repacking with commercially available materials:

- All electronics assemblies must be properly packed in ESD protective packing for transport, to prevent physical and ESD damage.

- The filler material used for packing must be antistatic or static dissipative, as this may come into contact with exposed connectors, wiring, or PCB assemblies. The use of non-conductive filler material may cause damage to the electronic assemblies reducing their operational life, or even destroying them.

- Use a sturdy cardboard box that will support the weight and size of the equipment.

- Attach a tag indicating the type of service required, return address, equipment type and full serial number.

- Completely wrap the equipment in bubble wrap (all sides must be protected) and secure the wrap in place with tape.

- Place the wrapped equipment inside the box surrounded by filler material, ensuring that there is no room for movement.

- Seal the box securely with packing tape.

Service and Warranty

Name and Address of Authorised Distributor:

This product carries a full warranty. For full details of warranty and service agreements, please contact the Authorised Distributor who supplied the product to you.

Exclusions

The warranty does NOT cover:

1. Customer misuse, including incorrect installation.
2. Damage other than manufacturing defects.
3. Transit / Courier damage.
4. Incorrect voltage or power supply used.
5. Incorrect input signal.
6. Abnormal environmental operating conditions.
7. Damage incurred by accident, fire, lightning or other hazard.
8. Modification to the unit or inexpert / attempted repair.
9. No fault found – where no fault can be found after extensive testing, indicating user error or failure in ancillary equipment.
10. Electronic assemblies which are improperly packed when returned for repair or service. All electronics assemblies must be properly packed in ESD protective packing for transport to prevent physical and ESD damage.

Should any of the above apply, Application Solutions (Safety and Security) Limited reserves the right to raise any relevant charges to the customer.

Application Solutions (Safety and Security) Limited shall not be liable for any indirect, special or consequential loss or damage (including without limitation any loss of profits) arising from the use of this product or for any breach of this warranty.

In the interest of continual product development, Application Solutions (Safety and Security) Limited reserves the right to make changes to product specification without notice or liability.