

# PVA-2P500 Power amplifier, 2x500W

## PAVIRO



- ▶ 2 x 500 W class-D power amplifier (70/100 V output)
- ▶ Low power consumption in standby mode
- ▶ Excellent sound quality, high signal-to-noise ratio
- ▶ EN 54-16 system certification

The PVA-2P500 class-D amplifier is a 2 x 500 W audio amplifier for evacuation purposes. It can be operated from both the mains and a DC supply.

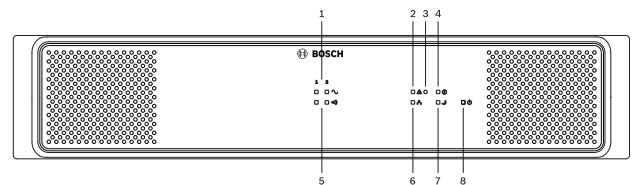
The output voltage is galvanically insulated and is constantly monitored for ground fault. An energy-saving mode and temperature-controlled fans reduce energy consumption and noise levels. The control and monitoring functions are performed via CAN bus. This amplifier is designed for operation in an emergency evacuation system. The amplifiers are usually controlled via a controller and configured using IRIS-Net.

The power amplifier has the following features:

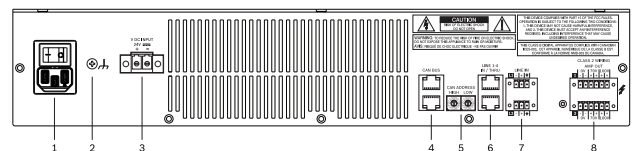
- Floating 100 V or 70 V power outputs
- High efficient amplifier blocks in class-D technology
- Outputs idling and short circuit-protected
- Mains operation 120-240 V (50/60 Hz) and/or 24 V DC emergency backup
- Electronically balanced inputs
- Temperature monitoring function
- Processor control of all functions
- Monitoring of the processor system via watchdog circuit
- Non-volatile FLASH memory for configuration data
- Internal monitoring function
- Integrated audio relays
- Line monitoring function
- Pilot tone and ground fault monitoring function via PVA-4CR12 controller or PVA-4R24 router

The power amplifier is processor-controlled and equipped with extensive monitoring functions. Line monitoring for the CAN bus and for audio transmission allows line interruptions and short-circuits to be detected and indicated to the user.

### System overview



- 1 Signal clip indicator light
- 2 Combined fault warning indicator light
- 3 Recessed button
- 4 Ground fault indicator light
- 5 Audio signal indicator light
- 6 Network indicator light
- 7 Standby indicator light
- 8 Power indicator light



- 1 AC power input and power switch
- 2 Grounding screw
- 3 DC power input
- 4 CAN BUS port
- 5 CAN ADDRESS selector switch
- 6 LINE IN 1-4 audio input sockets (RJ-45)
- 7 LINE IN 1 or 2 audio input sockets (Euroblock, balanced signal)
- 8 Amplifier power output sockets (70 V or 100 V)

### Certifications and approvals

#### Emergency standard certifications

Europe	EN 54-16, EN 54-4
--------	-------------------

#### Emergency standard compliance

UK	BS 5839-8
Austria	ÖNORM F 3033

#### Environmental directive compliance

Safety	EN62368-1
Immunity	EN 50130-4 EN 55103-2 (E1,E2,E3)
Emissions	EN 61000-6-3 ICES-003 FCC-47 part 15B class A
Environment	EN 50581
Maritime	EN 60945

#### Conformity

Europe	CE/CPR
USA	FCC
Canada	ICES
Australia	RCM
Korea	KCC
Russian Federation	EAC

#### Conformity

Environment	RoHS
-------------	------

#### Parts included

Quantity	Component
1	PVA-2P500 Power Amplifier
1	Power cord 230 V AC
1	Power cord 120 V AC
1	Set of connectors
1	Set of feet
1	Installation manual
1	Important safety instructions

#### Technical specifications

##### Electrical

Rated load impedance (output power)	
100 V	20 Ω (500 W)
70 V	10 Ω (500 W)
Rated output power, 1 kHz, THD ≤ 1%	2 x 500 W <sup>1</sup>
Rated input voltage	+6 dBu
Max. RMS voltage swing, 1 kHz, THD ≤ 1%, without load	
100 V	110 V
70 V	78 V
Voltage gain, ref. 1 kHz, fixed	
70 V	33.2 dB
100 V	36.2 dB
Maximum load capacitance	2 μF
Input level, max.	+18 dBu (9.75 V <sub>rms</sub> )
Frequency response, ref. 1 kHz, rated load, -3 dB	50 Hz to 25 kHz
Input impedance, active balanced	20 kΩ
Signal-to-noise ratio (A-weighted)	> 104 dB
Output noise (A-weighted)	< -62 dBu

Crosstalk , ref. 1 kHz	< -85 dB
Output stage topology	Class-D, transformer, floating
Power requirements	
Power supply	Mains: 115-240 VAC ±10%, 50/60 Hz <sup>2</sup> Battery: 21-32 VDC
Power consumption	Pmax - 3dB * / idle **/ Standby 230VAC, 50Hz: 700W / 21W / 1.9W 120VAC, 60Hz: 745W / 18W / 1.5W 24VDC, 60Hz: 735W / 16W / 1.5W * Alarm, ** No audio (pilot tone)
Inrush current	2 A
Inrush current, after five-second power cycle	1.3 A
Mains fuse	T6.3A (internally)
DC fuse	30A (internally)
Ground fault	R < 50 kΩ
CAN BUS port	2 x RJ-45, 10 to 500 kbit/s
Protection	Audio input level limiter, RMS output power limiter, high temperature, DC, short circuit,

	mains undervoltage protection, DC supply undervoltage protection, inrush current limiter, ground fault
Cooling	Front-to-rear, temperature-controlled fans

**Environmental**

Operating temperature	-5 °C to +45 °C (+23 °F to +113 °F)
Storage temperature	-40 °C to +70 °C (-40 °F to +158 °F)
Humidity (non-condensing)	5% to 90%
Altitude	Up to 2000 m

**Mechanical**

Dimensions (HxWxD)	88 mm x 483 mm x 375 mm (2RU)
Weight (net)	16.5 kg
Mounting	Standalone; 19 in. rack
Color	Black with silver

<sup>1</sup> In DC mode and in continuous alarm-signal operation, output signal limited by 3 dB max.

<sup>2</sup> Reduced output power at mains voltages below 115 V

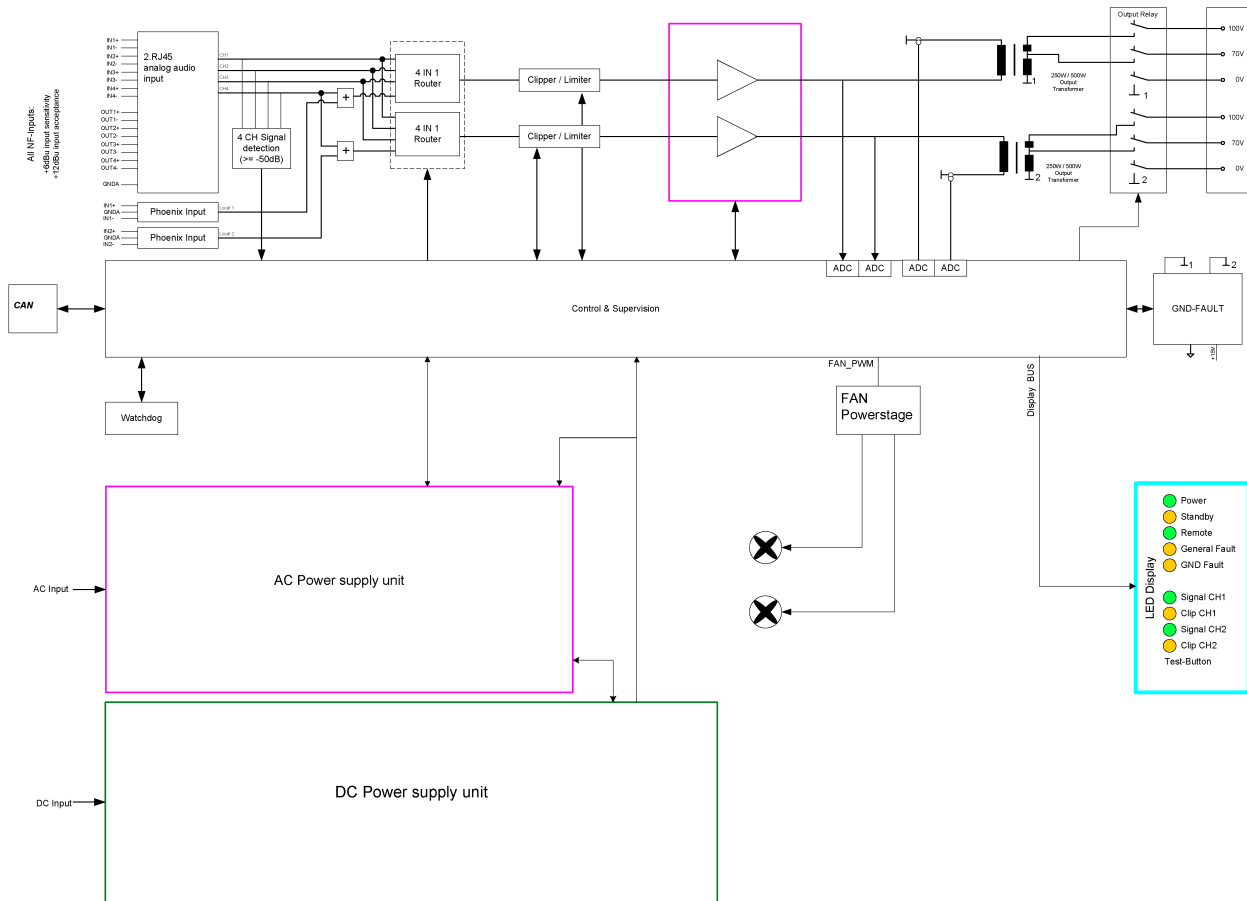


Fig. 1: Circuit diagram

**Ordering information**

**PVA-2P500 Power amplifier, 2x500W**

2-channel power amplifier for PAVIRO system, 2x500W, rack unit 2RU.

Order number **PVA-2P500 | F.01U.298.641**

**Services**

**EWE-PRSPAM-IW 12 mths wrty ext. power amplifier**

12 months warranty extension

Order number **EWE-PRSPAM-IW | F.01U.360.710**

**Represented by:**

**Europe, Middle East, Africa:**  
 Bosch Security Systems B.V.  
 P.O. Box 80002  
 5600 JB Eindhoven, The Netherlands  
 Phone: + 31 40 2577 284  
 emea.securitysystems@bosch.com  
 emea.boschsecurity.com

**Germany:**  
 Bosch Sicherheitssysteme GmbH  
 Robert-Bosch-Ring 5  
 85630 Grasbrunn  
 Germany  
 www.boschsecurity.com

**North America:**  
 Bosch Security Systems, LLC  
 130 Perinton Parkway  
 Fairport, New York, 14450, USA  
 Phone: +1 800 289 0096  
 Fax: +1 585 223 9180  
 onlinehelp@us.bosch.com  
 www.boschsecurity.us

**Asia-Pacific:**  
 Robert Bosch (SEA) Pte Ltd, Security Systems  
 11 Bishan Street 21  
 Singapore 573943  
 Phone: +65 6571 2808  
 Fax: +65 6571 2699  
 apr.securitysystems@bosch.com  
 www.boschsecurity.asia