PRM-4P600-US Power amplifier, 600W, 4 channel, US

SYNSONA amplifiers

- 4-channel amplifier, with a total powerTANK capacity of 600 W
- Variable Load Drive (VLD) providing the same power into 4 Ω, 8 Ω, 70 V or 100 V
- ecoRAIL and APD deliver significant reduction in power consumption
- dualCOOL convection cooling with additional intelligent fan in case of extreme thermal conditions
- Comprehensive protection package for reliable operation

The PRM-4P600 is a 600 W power amplifier with powerTANK technology that flexibly delivers the total power over its 4 channels.
The amplifier is ideally suited to background music and clear voice announcement applications such as:

- Supermarkets
- Bars and restaurants
- Retail outlets
- Education
- Houses of worship
- Museums and galleries
- Transport hubs
- Conference centers

Functions

powerTANK
powerTANK is a reservoir of available amplification power that is deployed flexibly across the 4 channels of the amplifier. There is no need to set up the powerTANK as it adapts to the requirements of each zone or output without extra manual configuration of each individual channel.

Variable Load Drive
Variable Load Drive (VLD) ensures that the powerTANK capacity is utilized efficiently, providing consistent power to any channel with any impedance.

dualCOOL
The dualCOOL thermal design means that the amplifier typically operates as a convection cooled amplifier, but in extreme thermal conditions the amplifier is also equipped with an intelligent multi-speed fan to ensure maximum performance and reliability in any application.

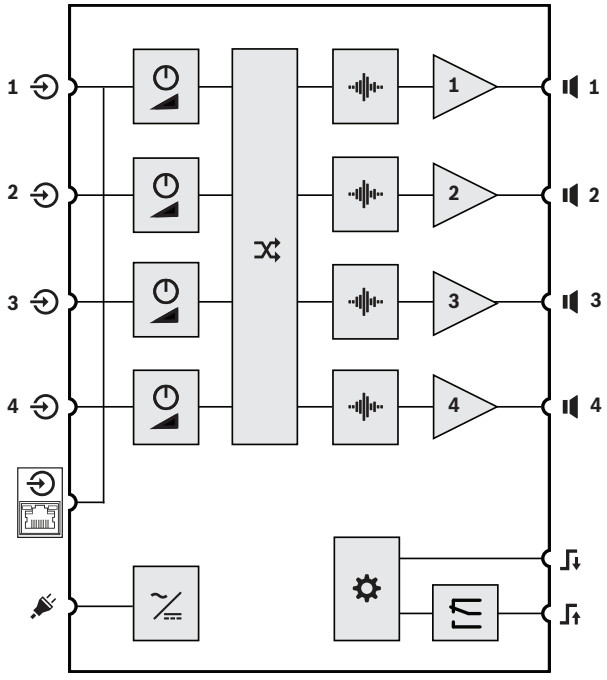
ecoRAIL
ecoRAIL's power consumption is similar to a regular standby level, yet ecoRAIL still produces audio output suitable for background music levels, and the Auto Power Down (APD) mode can be engaged to further reduce power consumption to less than a watt when there is no signal present for extended periods.

Line input
The single cable installation feature is compatible with AES72-1E (RJ45 connectors) wired devices. This solution provides easy installation for all four channels without needing to wire all the connections individually.

PFC power supply
Equipped with a PFC power supply and protection features usually reserved for the professional power amplifiers, means that the amplifier resists complete shutdown situations and will always perform at its best under all conditions.

Architects' and engineers' specifications
The 4-channel amplifier shall have a total power of 600 W, be able to adapt the power of the output channels with power sharing in either 4 ohm, 8 ohm, 70 V or 100 V conditions on any channel simultaneously. The amplifier housing shall be a 1" rack unit size design. The amplifier shall have a thermal design that can operate as passive cooled

device, but also be able to activate forced air-cooling when required under extreme conditions, to avoid reduction in available power. The reliable thermal operating range of the device shall be < 45 °C without reduction or shutdown. The amplifier shall have an automatic power down mode that can be turned on or off with a standby consumption of < 1 W. The amplifier shall also have a low power consumption feature whereby significant power consumption is reduced maintaining the output modulation suitable for background music. The amplifier shall be able to connect audio as either input or through to other devices using the AES72-1E wiring scheme. The amplifier shall be equipped with a PFC power supply and protections to ensure reliable and safe operation including High Frequency Limiter (HFL), Output Current Limiter (OCL), Rail Supervision Limiter (RSL), High Frequency Protection (HFP), DC Protection (DCP), Over Current Protection (OCP), Mains Fail Protection (MFP), Output Balance Protection (OBP), Over Temperature Protection (OTP), Over Voltage Protection (OVP). The amplifier shall be the Bosch PRM-4P600 power amplifier.



Internal functions

	Level control		Signal processing (Filter, limiter)
	Power supply		Controller
	Input routing		Amplifier
	Failure relay		

Rear panel input and output connections

	Signal input 1-4		Mains input
	Signal input 1-4 (AES72-1E)		Loudspeaker output 1-4
	REMOTE ON input		RDY/FLT output

Rear panel controls

	Level control		

Front panel indicators and control

	Device/channel fault (CH1-4)	LIMIT	Over driven channel (CH1-4)
SIGNAL	Input signal present (CH1-4)		Power On/Off amplifier

Regulatory information

Regulatory areas	
Safety	EN/IEC/CSA/UL 62368-1
Immunity	EN 55035, EN 61000-4-11
Emissions	EN 55032, EN 61000-3-2, EN 61000-3-3, ICES-003, e-CFR Title 47 Chapter I Subchapter A Part 15 Subpart B
Environment	EN/IEC 63000

Region	Regulatory compliance/quality marks	
USA	FCC	FCC suppliers Declaration of Conformity

Parts included

Quantity	Component
1	Power amplifier
1	Mains cord
1	Euroblock remote connector 5-pole
2	Euroblock input connector 6-pole
2	Euroblock output connector 4-pole
4	Rubber feet
2	19"-rack mounting brackets (pre-mounted)

Quantity	Component
1	Quick Installation Guide
1	Safety information

Technical specifications

Electrical

Output power	4 Ω	8 Ω	70 V	100 V
Rated output power[1]	4 x 150 W			
Maximum output power per channel (power sharing)[1] at minimum impedance	500 W	600 W	500 W	600 W
Total rated output power[1]	600 W			
Number of channels	4			
Output voltage rated output power	24.5 V_{RMS}	34.6 V_{RMS}	70.7 V_{RMS}	100 V_{RMS}
Maximum output voltage	40.0 V_{RMS}	56.0 V_{RMS}	70.7 V_{RMS}	100 V_{RMS}
Rated impedance per channel	4 Ω	8 Ω	33.3 Ω	66.7 Ω
Minimum impedance per channel	2.6 Ω	4 Ω	10 Ω	16.7 Ω

Amplifier	4 Ω	8 Ω	70 V	100 V
Nominal gain (+6 dBu input sensitivity, LEVEL 0 dB)	24.0 dB	27.0 dB	33.2 dB	36.2 dB
Maximum gain (0 dBu input sensitivity, LEVEL +6 dB)	30.0 dB	33.0 dB	39.2 dB	42.2 dB
THD+N (1/8 rated output power, 1 kHz)	< 0.1 %			
Crosstalk (ref. 1 kHz, 12 dB below maximum)	< -70 dB	< -75 dB	< -90 dB	< -95 dB
Frequency response[2] (ref. 1 kHz, analog in to speaker out, -3 dB)	HP: 30/100/150 Hz to 20 kHz LP: 30 Hz to 150 Hz		HP: 50/100/150 Hz to 20 kHz LP: 50 Hz to 150 Hz	
Damping factor (30/50 Hz to 1 kHz, ref. to rated impedance)	> 80	> 160	> 500	> 1000
Output stage topology	Class D, fixed frequency			

Amplifier	4 Ω	8 Ω	70 V	100 V
Signal to noise ratio (A-weighted, ref. to rated output power, LEVEL 0 dB)	> 98 dB	> 100 dB	> 101 dB	> 103 dB
Output noise (A-weighted, LEVEL 0 dB)	< -68 dBu	< -67 dBu	< -62 dBu	< -61 dBu

Connectivity	
Analog audio input	
Type	2 x 6-pin Euroblock, 3.81 mm, male, parallel 1x RJ45 (AES72-1E)
Maximum input level (LEVEL 0 dB)	+18 dBu
Input impedance, active balanced	20 kΩ
Mains Input	IEC C14
Loudspeaker output	2 x 4-pin Euroblock, 5.08 mm, female
Control Port	
Type	1 x 5-pin Euroblock, 3.81 mm, male
REMOTE ON	Remote On / Standby contact (overrides power button on front panel)
READY/FAULT	Galvanic isolated relay, max. 30 V_{DC} / 500 mA_{DC}

General	
Signal processing	Input routing, HPF 24 dB/Oct. selectable 100/150 Hz, LPF 24 dB/Oct. selectable 150 Hz, Flat, Peak limiter
Power requirements	100 V to 240 V, 50 Hz to 60 Hz AC
Power consumption	
Consumption at 1/8 rated output power	115 W
Idle mode (ecoRAIL with no input signal)	< 20 W
Standby mode (APD active)	< 1 W
Power supply topology	Switching power supply with power factor correction

General	
Protections	Audio limiters, high temperature, DC, HF, short circuit, back-EMF, peak current limiters, inrush current limiters, mains over/under voltage protection
Front status LEDs	Signal, limit, fault LEDs per channel; power LED

Environmental

Climatic conditions	
Cooling concept	Convection cooling in tabletop application and rack application with spacing between units. Forced cooling (side to rear) in rack application without spacing between units and in extreme thermal conditions.
Ambient temperature limits	-5 °C to +45 °C (+23 °F to +113 °F)
Altitude (operating)	-500 m to +5000 m (-1614 ft to 16404 ft)

Mechanical

Enclosure	
IEC Protection class	Class I (grounded)
Dimensions (HxWxD) With 19” mounting brackets	44.2 x 483 x 269.5 mm (1.74 x 19.2 x 10.6 in)
Weight	3.6 kg (7.9 lb)

[1]) Test signal for max. output power according IHF-A-202 (Dynamic-Headroom, burst 1 kHz / 20 ms on / 480 ms off / low level -20 dB)
[2]) Selectable via Filter.

Ordering information

PRM-4P600-US Power amplifier, 600W, 4 channel, US
4-channel, 600 W power amplifier with power sharing.
Order number **PRM-4P600-US | F.01U.409.541**

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
www.boschsecurity.com/xc/en/contact/
www.boschsecurity.com

Germany:
Bosch Sicherheitssysteme GmbH
Robert-Bosch-Ring 5
85630 Grasbrunn
Tel.: +49 (0)89 6290 0
Fax:+49 (0)89 6290 1020
de.securitysystems@bosch.com
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.com

Asia-Pacific:
Robert Bosch (SEA) Pte Ltd, Security Systems
11 Bishan Street 21
Singapore 573943
Phone: +65 6571 2808
Fax: +65 6571 2699
www.boschsecurity.com/xc/en/contact/
www.boschsecurity.com

© Bosch Security Systems 2024