

Power Module Type 12AA

Product Data and Specifications

Typical applications

- *Building-acoustics measurements*
- *Acoustic-transfer measurements*
- *Sound-intensity measurements*

The G.R.A.S. Power Module Type 12AA is a dual-channel power supply for preamplifiers used with condenser microphones. It is for general use in acoustic measurements as well as for intensity measurements; both in the laboratory and in the field. It has the following signal-conditioning settings:

- Linear-response
- A-weighting
- High-pass filtering

Whichever one is selected is applied to both channels.

The Type 12AA can be powered either by internal standard batteries or an external DC supply (12V -18V), e.g. a mains/line adapter. It is built into a sturdy anodized aluminium cabinet.

The polarization voltage for the microphone fitted to the preamplifier can be set to:

- 0V — for prepolarized microphones, or
- 200V — for externally polarized microphones

The voltage supply for the preamplifier can be set to:

- 120V — for maximum dynamic range, or
- 28V — for minimum power consumption

The Type 12AA will run for up to 10 hours on fresh standard alkaline batteries. A **Battery** meter indicates the condition of the batteries.

The inputs are two 7-pin LEMO sockets (A and B) on the front panel which are wired up (see Fig. 2) for G.R.A.S. microphone preamplifiers, e.g. Types 26AB, 26AC, 26AJ and 26AK, but are also compatible with other available makes of similar microphone preamplifiers.



Fig. 1 Power Module Type 12AA

The outputs are two standard BNC connectors (A and B) on the rear panel.

Both channels have an overload indicator. The gain in each channel can be set individually from -20 dB to +40 dB in steps of 20 dB.

The standard A-weighting filter in each channel complies with IEC Standard 60651: *Sound level meters Type 0*. The high-pass filter in each channel is a 3-pole Butterworth filter with a -1 dB cut-off at a frequency of 20 Hz. These filters are for reducing unwanted low-frequency signals, e.g. caused by wind-induced noise on the microphone.

For intensity measurements, which require extremely good phase matching, the preamplifier signals can be coupled directly to the outputs of the Type 12AA by selecting direct output. This makes the output of

Power Module Type 12AA

each preamplifier available free of any signal conditioning.

A built-in precision 1 kHz oscillator enables a complete check of each measuring channel when used with G.R.A.S. preamplifiers Types 26AH, 26AJ or 26AL, which include SysCheck. The oscillator can be activated directly via a push-button on the front panel or remotely via a mini-jack connector on the rear panel. The output level of the oscillator can be individually adjusted in each channel using a small screw driver on potentiometers accessible via holes in the front panel.

The cabinet of the Type 12AA is $\frac{1}{12}$ of a standard 19-inch rack; meaning that up to 12 of these Power Modules can be mounted in a standard 19-inch rack using the AK0040 Rack-mounting System.

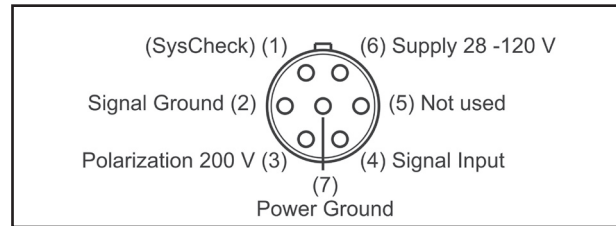


Fig. 2 7-pin LEMO female socket 1B (ext. view)

Specifications

2 channels (A and B), each comprising:

Input socket: 7-pin LEMO 1B female
Output socket: BNC coaxial

Gain:

-20 dB to +40 dB in 20 dB steps, and direct coupling

Output-voltages:

Preamplifier supply: 28 V or 120 V
Polarization voltage: 0 V or 200 V

Gain error:

< 0.2 dB

Frequency response (Lin setting):

3.5 Hz - 200 kHz: ± 1.0 dB
2 Hz - 250 kHz: ± 3.0 dB

Channel separation:

20 Hz - 20 kHz: > 65 dB

Inherent noise:

(20 Hz - 20 kHz with input grounded)
A-weighted: < 1 μ V
Lin: < 1.6 μ V
(20 Hz - 20 kHz with G.R.A.S. preamplifier and 20 pF dummy microphone)
A-weighted: < 3,2 μ V
Lin: < 5,7 μ V
(values valid for +20 dB and +40 dB gain re. input)

A-weighting filters:

Compliant with IEC 60651 Type 0

High-pass filter:

3-pole Butterworth, -1 dB at 20 Hz

Output impedance:

30 Ω

Power supply:

10 x LR6 (AA) standard alkaline cells, or
DC mains/line adapter supply: 12 V - 18 V

Power consumption:

With one G.R.A.S preamplifier using:-
120 V: 190 mA
28 V: 160 mA

Fuse:

315 mA (low impedance <1.5 Ω), 250V

Battery life (valid for 23 °C and alkaline cells) for:-

120 V supply: ≈ 8 hours
28 V supply: ≈ 10 hours

Operating temperature range:

-10 °C to +50 °C

Dimensions:

($\frac{1}{12}$ of a standard 19-inch rack)

Height: 132.6 mm (5 $\frac{1}{4}$ in)
Width: 34.6 mm (1.3 in)
Depth: 196.0 mm (7.7 in)

Weight:

770 gm (1.69 lbs)

Accessories included:

10 x LR6 (AA) alkaline cells EL0001
DC mains/line adapter:
Europe: AB0002
USA: AB0003

Accessories available:

19-inch Rack-mounting System: AK0040

G.R.A.S. Sound & Vibration reserves the right to change specifications and accessories without notice

G.R.A.S.
Sound & Vibration

Skovlytoften 33
2840 Holte, Denmark
Tel +45 45 66 40 46 Fax +45 45 66 40 47
e-mail: gras@gras.dk www.gras.dk