

# ***Instruction Manual***

## *Power Module Type 12AN*



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## 1. Introduction and Description

The G.R.A.S. Power Module Type 12AN (Fig. 1) is a portable, four-channel power supply for use with microphone preamplifiers and condenser microphones. It provides:

- a polarization voltage for four condenser microphones
- a voltage supply of  $\pm 15\text{V DC}$  for powering up to four microphone preamplifiers

### 1.1 Polarization Voltage

The polarization voltage can be set to either 0V or 200V via a switch on the rear panel (see Fig. 2.3). This switch is latched to avoid inadvertently changing its setting. Just pull the latch on the switch before changing the setting. Use:

- 0V for prepolarized microphones, and
- 200V for externally-polarized microphones

### 1.2 Power Supplies

The Type 12AN can run on batteries with a battery life of approximately 25 hours using G.R.A.S. preamplifiers, or from an external power supply of 6 - 20V DC (see section 3).

### 1.3 Input/Output

The Type 12AN has four 7-pin LEMO input connectors for microphone preamplifiers such as the G.R.A.S. Preamplifiers Types 26AM, 26AC and 26AK. These input connectors are also compatible with a range of microphone preamplifiers from other suppliers such as Norsonic, L&D and Brüel & Kjær. The output signals of the four microphone preamplifiers are available via standard BNC sockets for direct use with analyzers, voltmeters, oscilloscopes etc. These output signals from the LEMO input connectors (pin 4 - see Fig. 2.2) are AC coupled to their respective BNC output connectors.



Fig. 1.1 Power Module Type 12AN

## 2. External Features

### 2.1 Front Panel

The front panel has the following features (see also Fig. 2.1):

- Four 7-pin LEMO input connectors for microphone preamplifiers. Wiring diagram is shown in Fig. 2.2.
- Four BNC output sockets for the output signal of each microphone preamplifier.
- Power switch with two LEDs: green “OK”, red “Batt. Low”.

### 2.2 Rear Panel

The rear panel has the following features (see also Fig. 2.3):

- Input socket for an external voltage supply of 6 - 20V DC; centre pin +terminal.
- Twist/release holder for 200 mA low-impedance, slow-blow fuse.
- Latched switch for selecting a polarization voltage of either 0V (for prepolarized microphones) or 200V (for externally-polarized microphones).
- Detachable battery drawer for housing 4 alkaline cells LR 6 /AA. The use of an external voltage supply automatically disables power from the batteries.



Fig. 2.1 Front panel of the Power Supply Type 12AN

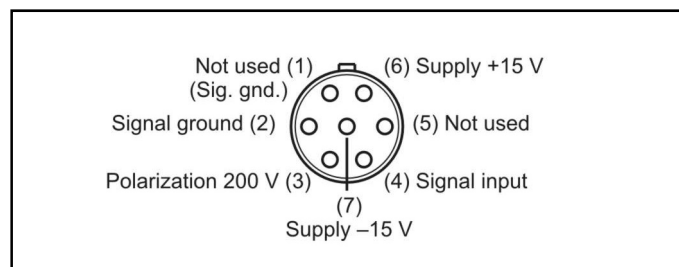
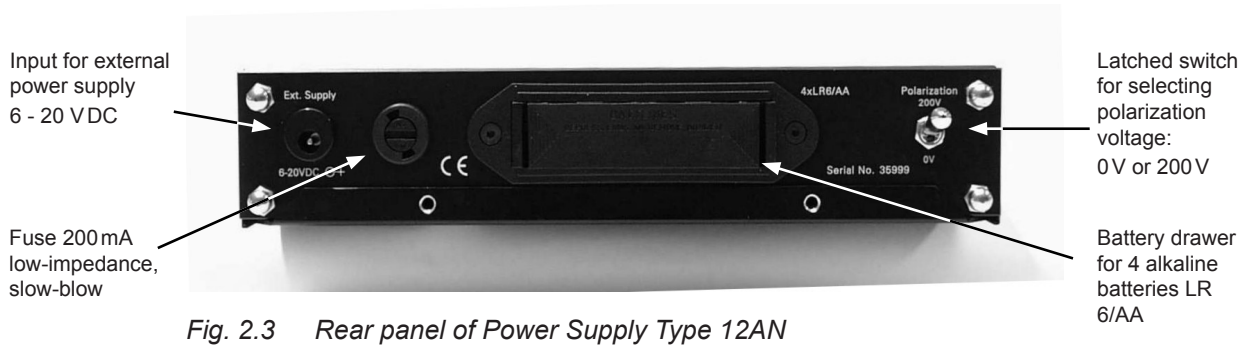


Fig. 2.2 7-pin LEMO female socket 1B (external view)



### 3. Batteries and External Power

The Power Supply Type 12AN can be powered either by internal batteries or from an external power supply. If an external DC power supply is connected via the **Ext. Supply** socket on the rear panel; any batteries inside the unit will automatically be disconnected.

The external power supply should be a mains/line adapter regulated to supply 6 - 20V DC with the centre pin as the + terminal. When the Type 12AN is switched on via the I-O switch on the front panel, the green **Power** LED will light up, and the red **Low Batt.** indicator should remain extinguished to ensure correct operation of the unit. If the **Low Batt.** LED lights up, either the external power supply voltage is too low, or the batteries need changing. To ensure valid measurements, we recommend that you change batteries whenever the **Low Batt.** LED is lit; there will be approximately ½ hour's use left after it first warns of low batteries.

To change the batteries, squeeze and pull out the battery drawer from the battery compartment on the rear panel (see Fig. 3.1). Remove all 4 batteries and replace them with fresh ones, making sure to observe the correct polarity as indicated in the battery drawer. Use alkaline batteries size AA or LR6. Replace the battery drawer in the battery compartment.

If the fuse blows, first rectify the cause then replace it with a new low-impedance slow-blow fuse rated at 200 mA.



Fig. 3.1 Battery drawer open: note polarity of batteries

#### 4. **Operation**

1. Make sure that power is available to the Type 12AN (see section 3) but don't switch it on yet.
2. Select which polarization to use (200V for externally polarized microphones or 0V for pre-polarized microphones).
3. Mount the microphone(s) on to the preamplifier(s)  
Note: all four microphones must be compatible with the polarization voltage selected in step 2.
4. Insert the LEMO plugs of the preamplifiers into the **Input** sockets of the Type 12AN.
5. Using suitable leads, connect the **Output** sockets of the Type 12AN to analyzers, voltmeters, oscilloscopes etc., and switch them on.
6. Switch on the Type 12AN.
7. Adjust the analyzers, voltmeters, oscilloscopes etc. to gauge correctly the signals from the Type 12AN.

## **5. Service and Repair**

Repairs should be carried out only by qualified personal. The Power Module Type 12AN should not be dismantled with power on because of high-voltage circuits.



## 6. Specifications

### Input/Output:

Inputs: Four 7-pin LEMO 1B female sockets for microphone preamplifiers  
Outputs: Four BNC coaxial sockets for the output signals of the microphone preamplifiers

### Output impedance:

30  $\Omega$

### Frequency response:

$\pm 0.2$  dB: 0.05 Hz - 200 kHz

### Preamplifier supply voltages:

Preamplifier:  $\pm 15$  V  
Polarization: 200 V (can be switched to 0 V when using prepolarized microphones)

### Power supplies:

4 x LR6 (AA) standard alkaline cells or  
Mains/line adapter supply regulated to 6 - 20 V DC

### Power consumption:

With external power supply 130 mA with four G.R.A.S. preamplifiers

### Battery life:

Approximately 25 hours using alkaline batteries and four G.R.A.S. preamplifiers  
(Valid at 23 °C)

### Fuse:

200 mA (Slow), 250 V  
(Low-impedance fuse)

### Operating temperature range:

-10 °C to +50 °C

### Dimensions:

Height: 44 mm  
Width: 210 mm  
Depth: 194 mm

### Weight:

1.2 kg without batteries.

### Accessories included:

EL0001: 4 x LR6 (AA) batteries  
Mains/line adapter supply regulated to 15 V DC  
AB0002: for 230 V AC or  
AB0003: for 120 V AC

Manufactured to conform with:

CE marking directive:  
93/68/EEC



WEEE directive:  
2002/96/EC



RoHS directive:  
2002/95/EC



G.R.A.S. Sound & Vibration continually strives to improve the quality of our products for our customers; therefore, the specifications and accessories are subject to change.