

PA1001

Power amplifier for driving an underwater loudspeaker and a high input impedance hydrophone amplifier in a suitcase with builtin batteries

This amplifier is designed for driving an underwater piezoceramic loudspeaker like the **Reson** type TC2130 or eq.

The Amplifier is capable of driving 90volt peak to peak of signal power up to 300kHz in a capacitive load of 10nF maximum with a characteristic impedance of 100ohm.

It also contains a high input impedance hydrophone amplifier and an envelope or "click" detector for monitoring, recording or listening.

The amplifier is supplied in a watertight suitcase with 4pcs. 12volt batteries. Operating time is appr. 12hours on a set of fully charged batteries.



This amplifier is a stand alone unit with a power amplifier and a hydrophone receiver amplifier complete with builtin envelope or "click" detector and batteries and charger supplied all together in a watertight suitcase.

High impedance preamplifier input suitable for piezoceramic transducers like the Reson type TC4033 or eq. See also www.RESON.com Input impedance >1G and < 10pF

Gain : 0 to 30dB / Bandwidth : 10Hz to 1MHz -6dB
Relativ input noise : <3uVrms @ 0dBgain
Relativ input noise : <2uVrms @ 20dBgain
Noise measure bandwidth : 500Hz to 8KHz
Cable lenght recommended max : 20 meter

10mAmp Loop for hydrophones with buildin current loop preamplifier like the etec 602 type.
This is a two-wire low impedance transmission line carrying both the power supply for the preamplifier and the hydrophone returnsignal on the same two wires.
There are no drawback with this configuration compared to conventional amplifier technology.
Distance max : 100meter cable RG58 style or eq.

Balanced input with buildin 48Volt phantom power supply. Designed for connection of standard studiomicrophones with 3pole XLR connectors.
It will drive the DPA microphones serie 4000 studio microphones as well as the their 8011 hydrophone.
These inputs may also be used singlesided :
XLR pin1: GND=0V
XLR pin2: Positive input
XLR pin3: Negative input
See also www.DPAMicrophones.com

Input amplifier and Gain selector used to switch between the tree different input amplifiers. Gain is priveded here only with the preamplifier selection.
Bandwidth : 10Hz to 1MHz (700KHz @ 30dB gain)

Input SeaWave filter 1.st order 6dB/octave / 10 Hz filter is 2.st order 12dB/octave.

Liniar input amplifier offering extra gain 10Hz to 1MHz.

Hydrophone Output signal presenting input selection. Used for recordings.

Detector Output signal same as the hydrophone signal but led through an envelope detector for audible detection of sonar signals in the frequency range from 20KHz to 700KHz.
Used for recordings.

Left and Right Line Inputs for external connection to the output power amplifiers.
Used for playback to the loudspeaker(s).

Source selector to switch between internal and external signal sources.
The output from this point is led on to the Line output terminals for recordings and to the output level controls and thus to the power amplifiers.
It is not a legal situation to input select a hydrophone placed in the same media as an underwater loudspeaker and turn up the volume.
This will cause oscillation at a very high frequency.

Output Level Left and Right for controlling the level for the output power amplifiers.

Left and Right Line Outputs presenting whatever selected on the inputs.
Used for recordings.

Output Selector
switches between normal two channel Stereo and the Bridge configuration.
OFF position mutes the output but do not switch off the power to the amplifier.

Power output terminals
for the connection of an underwater loudspeaker

like the Reson TC2130 or eq. Nominal load
Impedance : 100 ohm or max. 10nF
Output power level is +/- 24Volt peak in the
STEREO position OR +/- 48Volt peak in the
BRIDGE position. With the BRIDGE configuration
the load must be connected to the left and right
RED terminals thus forming a balanced floating
output. Cable screen may be connected to any of
the black terminals which are 0Volt reference and
chassis and center of the batteries.

Right channel power output terminals. Same as the above.
Specifications are the same as for the Left channel output.

In Bridge position the Right output is inverted.
Power bandwidth is 10Hz to 300KHz. Current consumption
is appr. 0.1Amp stand by when switched on but without signal through.
ON/OFF switch on the right side of box
REMEMBER to switch off when not in use.

In Stereo position the outputs are in phase.
The power outputs may also drive a set of conventional loudspeakers at 4 or 8 ohm.

General information regarding BATTERIES :

4 pcs Panasonic type LC-R123R4PG or eq. / 12Volt 3.4Ah
Size : H x W x L = 60 x 67 x 134mm
External charger : 60Volt 0.2Amp. / Charge time : 24 Hours max.
Disconnect batteries when not in use for periods longer than 4 weeks
Keep cool when not in use. Recycle when worn out.

