

## integrated amplifier - PULSAR PA 1230 R



If you believe that one and one make two, this slim integrated amplifier may give you cause to ponder. After all, it contains two fully developed separate components - the P 1220 R pre-amplifier and A 1230 power amplifier - and yet is not one millimetre larger than either of them. Where is it all? And where does that marvellously dynamic performance come from? That 300 Watts of nominal power into 4 Ohms? We'll tell you just one secret: it's all in there. And you can hear it and read it. This compact unit combines the technology of the **A 1230 R** power amplifier and the **P 1220 R** pre-amplifier. To protect the amplifier and the speakers connected to it an electronic circuit monitors the signals in the amplifier. This protective circuit is not located in the signal path, so it has absolutely no influence of any kind on the sound image. The circuit monitors the input signal before the output stage, and compares it with the output signal. If the slightest deviation occurs (clipping, distortion etc.) the circuit switches off the output relays. The protective circuit also trips if the outputs are shorted, or if the unit overheats.

### Connection elements



- GND** The ground lead from an analogue disc player is connected here in order to avoid hum.
- TUNER** Input sockets for connecting high-level signal sources such as tuner.
- CD** Input sockets for connecting high-level signal sources such as CD player.
- AUX 1** General-purpose pre-amplifier inputs with an input sensitivity of 250 mV / 20 k $\Omega$  .
- AUX 2** General purpose pre-amplifier input with an input sensitivity of 250 mV / 20 k $\Omega$  . If an **MM** or **MC** phono module is fitted then **AUX 2** is the phono input.
- With MM phono module:** Input socket for disc players with moving magnet (MM) cartridge systems. Input capacitance (100 pF ... 500 pF) and input sensitivity (1 mV ... 5 mV) variable by means of switches. Simply set the values closest to those stated by the cartridge manufacturer.
- With MC phono module:** Input socket for disc players with moving coil (MC) cartridge systems. Input impedance (5  $\Omega$  ... 650  $\Omega$  ) and input sensitivity (50  $\mu$ V ... 1000  $\mu$ V) variable by means of switches. Simply set the values closest to those stated by the cartridge manufacturer.
- TAPE 1** Input and output sockets for connecting devices which can record and play back (recorders).

<b>TAPE 2</b>	Input and output sockets for connecting devices which can record and play back (recorders). The input is equipped with an input buffer to be connected to source units with high output impedance (>1kΩ).
<b>TV</b>	Input sockets for connecting high-level signal sources such as TV or VCR. The input is equipped with an input buffer to be connected to source units with high output impedance (>1 kΩ).
<b>PRE</b>	Variable asymmetrical pre-amplifier output fitted with cinch sockets. As this is a very low impedance output it is suitable for long leads (e.g. to connect active speakers).
<b>SPEAKER A + B</b>	Two pairs of loudspeakers can be connected to the amplifier (SPEAKER <b>A</b> and SPEAKER <b>B</b> ).
<b>RC-IN</b>	Input socket for the <b>E 2000</b> remote control receiver.
<b>RC-OUT</b>	The remote control signals are transferred to the source devices via the remote control leads <b>RZ 001</b> , which are plugged into the <b>RC-OUT</b> sockets.
<b>RLink</b>	Control output – preparation to control futur " <b>R</b> "-system components with extendend functions. A software update may be necessary.
<b>TASI</b>	Connection to T+A Surround decoder.

## Specifications

### Pre-amplifier

*Frequency response + 0 – 3 dB* 0,5 Hz – 400 kHz

### Signal: noise ratios (A-weighted)

*High level* 87 x 104 / 109 dB

*Phono MM* 82 / 86 dB (Non-standard version)

*MC* 78 / 82 dB (Non-standard version)

*Sub-sonic filter* fixed (Non-standard version)

*Total harmonic distortion* < 0,001 %

*Intermodulation* < 0,001 %

*Channel separation* > 90 dB

### Nominal input sensitivity

*High level* 250 mV / 20 kOhms

*MM* 1 – 5 mV

16 capacitances

*MC* 60 – 1000 uV

16 impedances

### Outputs

*Headphones* 50 Ohms

*2 x Tape* 250 mV / 100 Ohms

*PRE out Cinch nominal* 1 V eff

*max.* 9,5 V eff

*Impedance* 22 Ohms

*Dolby surround interface with fixed level (TASI)* present

### Output stage

*Nominal output 8 Ohms* 100 Watt

*per channel 4 Ohms* 150 Watt

<i>Peak output 8 Ohms</i>	150 Watt
<i>4 Ohms</i>	290 Watt
<i>Power bandwidth</i>	1 Hz – 300 kHz
<i>Frequency response + 0 – 3 dB</i>	1 Hz – 400 kHz
<i>Slew rate</i>	60 V/us
<i>Damping factor</i>	> 500
<i>Signal: noise ratio (A weighted)</i>	> 110 dB
<i>Total harmonic distortion</i>	< 0,002 %
<i>Reservoir capacity</i>	50000 uF
<i>Mains supply 110 V or 220 / 240 V, 50 Hz</i>	300 VA
<i>Dimensions</i>	7,5 x 44 x 39 cm
<i>Weight</i>	9 kg
<i>Colours</i>	Black (9005), silver aluminium, chrome (Non-standard version)
<i>Remote control</i>	(Non-standard version)  Phono module replaces one high- level input

*We reserve the right to alter technical specifications.*