



PM1122
Instruction manual

PM1122 Manual



Introduction

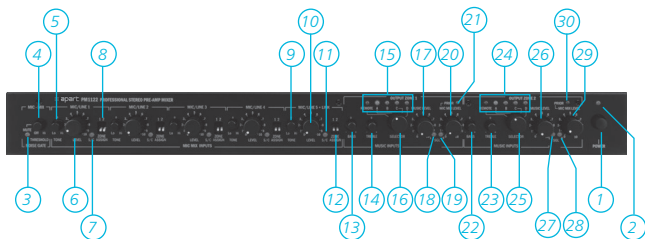
- After reading these pages, most of you will be able to connect sources and operate this unique pre-amp/mixer without further instructions. For more details, please take a look at the blockdiagram for better understanding and refer to the front and rear panel layout descriptions on the next pages.
- The PM1122 features 5 mono mic/line balanced inputs with individual sensitivity, level and tone adjustment potmeters. Each mic input has its own phantom dipswitch at the back. Each mic input can be assigned to zone 1 and/or zone 2 outputs with dipswitches on the front of the preamp. **Don't use unbalanced sources in combination with phantom power turned on on the same channel !** Every mic/line channel has its own signal/clip led, it lights green when a sufficiently strong signal is present, and turns red when the input is overloaded, turn down the sensitivity adjustment at the rear to prevent unwanted overloads !
- The 5 mic/line inputs (+ the adjustable chime) are all being mixed together to the mix mic output after passing through the adjustable noise gate. This circuit mutes the mic/line + the chime output signal mix output when no sufficiently strong signal is present. The gate is active (closed) when the yellow led lamp next to the gate sensitivity knob is lit. Use the gate only to mute unwanted mic noise in your mic/line signal, it is not a "vox" or "voice over" circuit. Set the threshold until the gate "opens" when you are talking softly (not shouting !) into one of the connected mics or when a mono line signal is present or when the chime is activated (first set the chime and mic levels to an appropriate level). The combined output is separately available at the rear of the device and allows you to use

multiple PM1122 units in a chain with even more mics, output zones or line sources.

- A separate mix/mic input is also provided to accept the mix/mic signal from another PM1122 preamp's mic mix output. The level of this input can be adjusted with the mic/line 5 potmeter at the front. You can also use this "line input from another PM1122" as an unbalanced mono line input. When the settings are all done correctly, you can use both inputs mic/line5 and link input simultaneously because they are being mixed together internally.
- Mic inputs 1 and 2 offer an external switch connection on the euroblock connector to activate the chime and priority. Chime level is also presettable at the rear. Set its level to zero if you don't need the chime. The rear priority dipo switches allow you to preset if line level mute per zone is activated yes or no in case a priority mic contact is activated. Mono inputs are numbered from 1 to 5 and are all mixed together, so in fact you can use this single priority contact in parallel for all 5 inputs if required (e.g. 5 call mics in a supermarket).
- PM1122 also has 4 stereo line level inputs called A to D. Line level is presettable at the rear, this allows signals from various sources to sound equally loud when you are switching from one source to another. Line levels reaching from MP3 player's headphone outputs up to professional line levels from mixers or other sound sources like tuners, CD players etc can be applied to these unbalanced cinch connectors. Line inputs can be assigned to two zones with the front music input selectors, or can be remotely controlled with the separately available remote control units.

- Zone outputs are individually switchable to mono or stereo at the back and have separate bass, treble, priority set and music level adjustment per zone. Zone 1 and 2 outputs are available unbalanced on cinch connectors and zone 1 also available balanced on euroblock connectors.
- Finally there is the balanced emergency input with priority contact and adjustable input level. Level is presettable at the rear only for safety reasons.
- For remote control and local signal input, there are 2 pcs RJ45 style connectors available at the rear, one connector per zone. These are NOT LAN compatible !!! Don't connect any LAN cable from computer or other networks to these terminals, they are meant for connecting Apart-audio remote control systems only. See the manual of these units for more details.

Front panel



1. **Power on / off switch.** Push the button to turn power on and off. As an experienced audio device user, you know you have to switch on the preamp first, and then the power amp. When powering off, please turn off the power amps first and then the preamp.
2. **Power led:** this led lights when power is switched on.
3. **Mute led:** this led lights up when the mute circuitry or noise gate is closed. Use it to eliminate unwanted noise or background noise coming through from your mic/line inputs.
4. **Noise gate threshold:** set the knob to the off position if you don't want to use the noise gate. Set the gate so that it opens (mute led dark) when you talk into one of the mics connected to the mic/line 1 to 5 connectors. Please take notice that the chime signal is also routed through this gate, so use it only as a noise suppressor.
5. **Tone control mic/line 1 to 4:** turn the knob to darken the tone (turn to the left) or to brighten the tone (turn to the right).

6. **Mic/line 1 to 4 level:** use this knob to adjust the mic 1 to 4 level.
7. **S/C led: signal/clip led:** the led lights up green when the mic signal is sufficiently strong, and becomes red if the mic preamp is clipping. Turn the preset input trimmer of the corresponding input down at the back of the unit when the led becomes red. The red clip leds monitor the input circuit at all times, even when the level on the front panel is turned to the zero position.
8. **Zone assign dipswitches:** activate the dipswitches to assign mic/line input 1 to 4 to zone 1 and/or zone 2 output. Dipswitch down = input assigned.
9. **Tone control mic/line 5 + link:** turn the knob to darken the tone (turn to the left) or to brighten the tone (turn to the right).
10. **Mic/line 5 + link level:** use this knob to adjust the mic/line 5 level and/or the link input.
11. **S/C led: signal/clip led:** the led lights up green when the mic/line signal is sufficiently strong, and becomes red if the mic preamp is clipping. Turn the preset input trimmer of the corresponding input down at the back of the unit when the led becomes red. The red clip leds monitor the input circuit at all times, even when the level on the front panel is turned to the zero position.
12. **Zone assign dipswitches:** activate the dipswitches to assign mic/line input 5 or the link input to zone 1 and/or zone 2 output. Dipswitch down = input assigned.
13. **Zone 1 bass tone control:** effective on music signals only.
14. **Zone 1 treble tone control:** effective on music signals only.

15. **Zone 1 line input indicator leds:** these leds indicate which line or music source input has been assigned to zone 1 output. The red remote led indicates that the input selector shall be operated by a separately available remote control unit only.
16. **Zone 1 line/music input selector:** turn this rotary input selector to select input from line inputs A to D or set it to remote control.
17. **Music level knob:** turn this volume knob to adjust the zone 1 music level.
18. **Signal led:** this green led indicates that a signal is present on the left zone 1 output.
19. **Signal led:** this green led indicates that a signal is present on the right zone 1 output.
20. **Mic mix level knob:** turn this volume knob to adjust the microphone mix signal (mic/line 1-5 + link input) for zone 1.
21. **Priority led:** this led lights up when priority is activated by the emergency input and/or by the mic 1 or mic 2 switch at the rear and when priority is activated for zone 1 with the rear dipswitch.
22. **Zone 2 bass tone control:** effective on music signals only.
23. **Zone 2 treble tone control:** effective on music signals only.
24. **Zone 2 line input indicator leds:** these leds indicate which line or music source input has been assigned to zone 2 output. The red remote led indicates that the input selector shall be operated by a separately available remote control unit only.

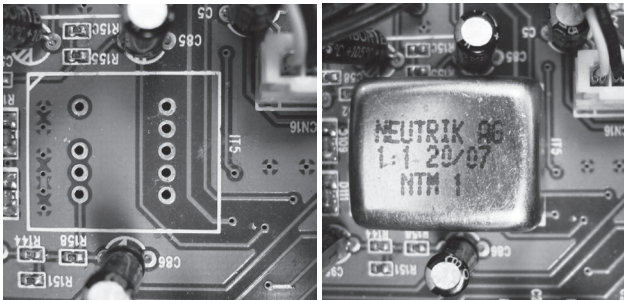
25. **Zone 2 line/music input selector:** turn this rotary input selector to select input from line inputs A to D or set it to remote control.
26. **Music level knob:** turn this volume knob to adjust the zone 2 music level.
27. **Signal led:** this green led indicates that a signal is present on the left zone 2 output.
28. **Signal led:** this green led indicates that a signal is present on the right zone 2 output.
29. **Mic mix level knob:** turn this volume knob to adjust the microphone mix signal (mic/line 1-5 + link input) for zone 2.
30. **Priority led:** this led lights up when priority is activated by the emergency input and/or by the mic 1 or mic 2 switch at the rear and when priority is activated for zone 2 with the rear dipswitch.

Optional balanced mic transformers

The PM1122 printed circuit board has all the necessary provisions to add optional microphone input transformers. This modification can only be done by a qualified technician.

To access the transformer locations, remove the bottom and lid from the preamp. On the componentside of the PCB you will find 5 locations called IT1 to IT5. Furthermore, you will have to remove 2 capacitors per added transformer according to the list below.

We recommend the following brand and type of transformer:
Neutrik NTM-1.

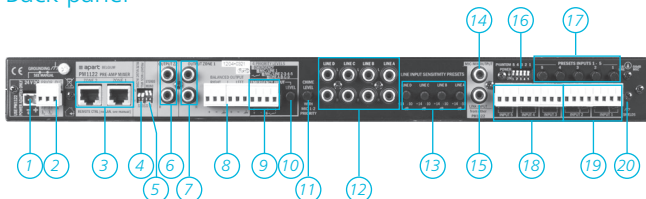


MICROPHONE INPUT NUMBER	PCB LOCATION	CAPACITOR TO REMOVE
MIC1	IT1	C13 & C14
MIC2	IT2	C213 & C215
MIC3	IT3	C44 & C45
MIC4	IT4	C57 & C58
MIC5	IT5	C85 & C86

The suggested transformer's pin layout fits perfectly on the PCB

After soldering the transformer from the soldering side, please remove the 2 capacitors as listed in the table to complete the modification.

Back panel



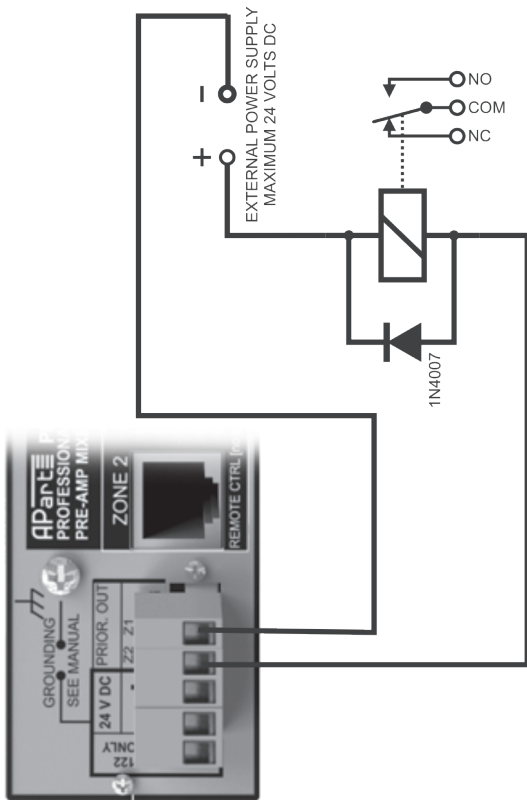
1. **24 VDC connector:** connect the supplied power supply on these connectors. Please mind the polarity (+ and -) if you have to reconnect the connector to the power cord.
2. **Open collector outputs zone 1 and 2:** These outputs can sink max 50mA at 24 VDC max. See the schematic below for connection details. Don't apply any AC or mains voltages to these connectors. Always use a separate power supply if you want to power external relays etc.
3. **Zone 1 and 2 remote control connectors:** connect the separately available Apart-Audio remote controllers on these RJ45 style connectors. These are not LAN or other kind of network compatible connectors !
4. **Zone 1 / 2 priority assign dipswitches:** set the zone 1 and/or zone 2 dipswitch(es) to "Y" if you want priority mics to mute the line/music signal on zone 1 and/or zone 2 output.
5. **Zone 1 / 2 mono stereo switch:** set this switch to "mono" to mix the zone 1 and/or zone 2 stereo signal(s) to a monophonic signal.
6. **Zone 2 output:** connect your zone 2 amplifier system on these unbalanced cinch line outputs.
7. **Zone 1 output:** connect your zone 1 amplifier system on these unbalanced cinch line outputs.
8. **Zone 1 output:** connect your zone 1 amplifier system on these balanced euroblock line outputs.
9. **Emergency input:** connect your balanced emergency signal with emergency switch on these euroblock connectors. The input is transformer balanced (e.g. for connecting a telephone line signal).

10. **Emergency level:** adjust emergency level with this knob. Please note that when the emergency switch is activated, the music or mic/line mix signals will be muted and only the emergency signal will be heard in zone 1 and 2. The emergency switch does not activate the chime.
11. **Chime level:** use this knob to preset the chime level when mic1 or mic2 priority is activated. Please note that the chime signal is also sent through the noise gate. If you set the noise gate threshold at a high level, chime signal may be muted by the noise gate. Set the noise gate threshold at a lower level instead of boosting the chime level. The noise gate has been added to mute unwanted mic noise and it is not a "vox" circuit !
12. **Line A to D stereo line level inputs:** these unbalanced cinch connectors accept stereo line level signals coming from music sources such as tuners or CD players, or even headphone outs from portable music players, up to line levels coming from professional mixing desks. Max input level is +14dBv !
13. **Line A to D sensitivity preset:** turn these knobs to preset the line A to D levels so that they sound equally loud when switching from one to another.
14. **Mic mix output:** this unbalanced cinch connector contains the mic mix signal from mic/line inputs 1 to 5 and is meant to be connected to another PM1122 in a chain.
15. **Link input:** this unbalanced cinch connector accepts the signal from another PM1122 in a chain. You could also use it as a mono unbalanced line 5 input. The level from this input is adjusted with the front mic/line 5 + link knob.

16. **Mic 1 to 5 phantom switch:** flip down the dipswitch from channel 1 to 5 if you want to apply a 20 VDC phantom power to input 1 to 5. Don't use unbalanced sources in combination with phantom power turned on on the same channel !
17. **Mic/line 1 to 5 sensitivity knobs:** turn these knobs to adjust mic/line 1 to 5 input sensitivity and gain: the signal/clip led present on mic/line input 1 to 5 is your guide: turn down the knob to the left first, and gradually turn it to the right while you are speaking loudly in the mic or while the line signal is applied. When the signal/clip led turns red, you are overloading the input. Turn the knob to the left a little until the led doesn't light up red anymore. Take your time to preset all mic/line inputs this way.
18. **Input 3 to 5 input blocks:** connect your balanced mic or line signals on these euroblock connectors.
19. **Input 1 and 2 input blocks:** connect your balanced mic or line signals on these euroblock connectors. Additionally connect the mic 1 and/or mic 2 switch(es) on these blocks to activate the chime and priority. These contacts can be used for inputs 3-5 as well. Please note the priority system; the MIC1 contact will mute MIC2-3-4-5 + Music, and the MIC2 contact will mute Music (if dipswitch 4 is set).
20. **Ground connector:** connect your system's ground or safety ground on this connector if this is not already done by mounting the unit in a properly grounded rack.

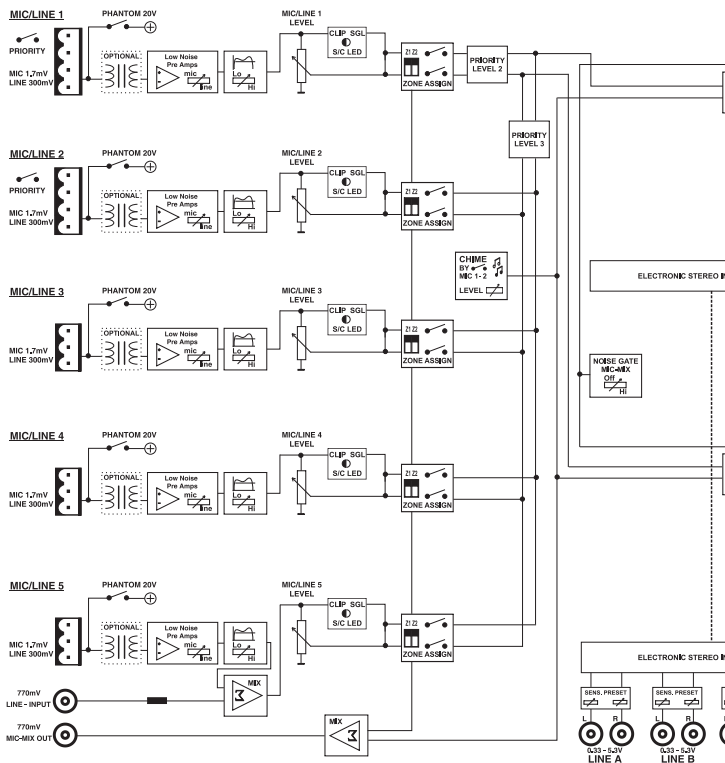
For additional functionality, there are also 2 open collector outputs at the rear controlled by the priority switch, one output per zone. They can only be used by qualified technicians. Maximum sinkable current per output is 50 mA, maximum voltage is 24VDC. No AC voltages are allowed on these outputs ! In case of inductive loads such as relays, provide additional measures to avoid damage to the open collector outputs.

Please use the schematic shown below as a guideline:



EXAMPLE:
RELAY CONNECTION ON OPEN COLLECTOR OUTPUT
FROM ZONE1.
MAX. LOAD = 50mA / 24VDC

Blockdiagram



Technical Specifications

Outputs	
Output stereo zone 1 balanced	Euroblock connector 6 dB, 2 V, 100 ohm
Output stereo zone 1 unbalanced	Cinch connector 0dB, 1 V, 100 ohm
Output stereo zone 2 unbalanced	Cinch connector 0dB, 1 V, 100 ohm
Frequency response	20Hz - 22 kHz
Noise	> 93 dB
THD	< 0,008 %
Crosstalk	> 70 dB
Max nominal gain	+6 dB
Max output voltage	+19 dBV, 9 V
Insert pcb for signal-processing	Pcb ready, processors optional
Tone control zone 1 and 2	Bass 75 Hz +/-10 dB treble 10 kHz +/-10 dB
Music and micmix level control	0-10 V VCA operated
Chime level	2-Tone, > 1 V
Priority outputs	Open collector zone 1 and 2, max 24 V, max 50 mA
Line inputs	
Line a to d	Cinch connectors l & r channel
Line a to d sensitivity	Trim from 330 mV/ -10 dBV to 5,3 V / +15 dBV
Line a yo d impedance	17 k Ω
Line a to d max input level	+20 dBV

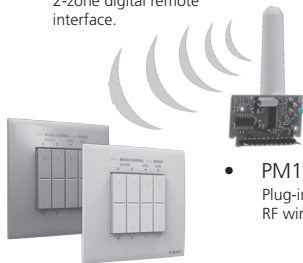
Emergency input	Balanced euroblock connector, transformer coupled
Emergency input sensitivity	0 dBV, 1V
Emergency input impedance	600 ohm
Mic/line inputs	
Input mic/line 1 to 5	Balanced on euroblock connectors
Transformer balanced (ntm 1)	Pcb ready, transformers optional
Input mic/line 1 to 5 sensitivity	Trim from 1,7 mV / -55 dBV to 300mV/ -10 dBV
Input mic/line 1 to 5 impedance	1,2 k Ω
Input mic/line 1 to 5 max input level	-6 dBV
CMRR	> 55 dB (electronically balanced)
S/N ratio	> 75 dB @ mic level 4 mV
THD	< 0,09%
Phantom power mic/line 1 to 5	20 V, individually switchable
Tone control mic/line 1 to 5	From 100 Hz / +3 dB, 10 kHz / -6 dB to 100 Hz / -9 dB, 10 kHz / +4 dB
Link input	20 k Ω -2,5 dB 770 mV
Link output	100 ohm -2,5 dB 770 mV
Noise gate threshold mic/line 1 to 5	Off to -20 dB
General	
Power supply (adapter included)	24 VDC 1000 mA / max 24 VA
Dimensions (wxdxh)	438 X 222 (245 with knobs & connectors) x 44 mm

Shipping weight	4.0 kg
Net weight	3.2 kg
Remote control	
Optional models	Via rj45 cat-5 per zone
1-Zone wall control panel, wired, for 503 wall-box	PM1122R
PM1122R with local input, wired, for 506 wall-box	PM1122RL
2-Zone interface control RS232, 2 x 6 presets	PM1122-INT
Wireless receiver for PM1122-INT	PM1122WR
Wireless flat wall control, batt incl, white	PM1122W-W
Wireless flat wall control, batt incl, silver	PM1122W-SLV

Options



- PM1122-INT
2-zone digital remote interface.



- PM1122R
Plug-in receiver module for RF wireless remote control.

RS 232
CONTROL



PC software included with the PM1122-INT interface.

- PM1122RL
Analog remote control with local audio input.



- PM1122R
Analog remote control.



Analog remote control.

- PM1122W-SLV
 - PM1122W-W
Ultra flat wireless control.

developed
by
Audioprof nv
Industriepark Brechtsebaan 8 bus 1
2900 Schoten - Belgium

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Apart-Audio specifications are subject to change without notice.



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