

The mixer amplifier shall be a high performance, professional public address mixer amplifier with modern state of the art features. It shall be possible to build an easy to operate yet powerful and flexible public address system. It shall have an internal power amplifier for constant voltage systems. The connections to the loudspeakers shall be on Eurostyle pluggable screw terminals. The mixer amplifier shall have 6 microphone/line inputs. All Mic/line inputs shall be switchable between microphone level and line level sensitivity. The inputs shall be balanced and shall be able to be used unbalanced, to provide power to condenser microphones phantom power shall be provided. The mic/line inputs shall have XLR connectors.

The mixer amplifier shall have 3 stereo music source inputs on cinch connectors. The inputs shall be converted to mono. The mixer amplifier shall have a separated input for 100v and telephone input on a balanced screw terminal. The mixer amplifier shall have a separate call station input with priority and voice activation. The mixer amplifier shall be able to address two separate zones independently. The mixer amplifier shall have 2 channel operation. The mixer amplifier shall have a voice activated emergency override on inputs one and two. The mixer amplifier shall have a two-tone chime built in. The output of the mixer amplifier shall be transformer isolated 100V and 8 Ohms. There shall be outputs for zone 1 and for 2 two the unit shall have a relay that switches with the call activation (call only).

The mixer amplifier shall be able to deliver a total 120 / 240 Watts continuously to a constant voltage or 8 Ohm load. It shall be possible to distribute the power in any ratio between all outputs; zones, call only output and low impedance. Peak power output shall be 50% higher than the continuous output.

The mixer amplifier shall have an audio loop through for inserting a serial processing device like an equalizer in the signal path. The mixer amplifier shall have a line level output. The line level output shall be switchable between preamplifier out or music only output for zone that require only music or for music on hold for telephone systems.

It shall be possible to run the mixer amplifier on 115 VAC, 230 VAC and 24 VDC backup power. The unit shall have a 0.5 A trickle charger built in inside the unit. The mixer amplifier shall have separate tone controls for mic/line inputs and music sources.

Input channel 1 and 2 shall be able to take priority over all other microphone and music inputs. Input 1 shall be able to be activated by contact closure on the PTT (push to talk) input or the input shall be able to be switched automatically if a signal shall be fed to the input i.e. if someone speaks into the microphone (VOX activation). A 2-tone chime shall be able to be configured to precede an announcement. Input 2 also shall have a VOX possibility. When one or both inputs shall be configured to have priority, the amount of attenuation (reduction) of all other inputs, mic/line or cinch, shall be able to be set between 0 dB (no attenuation) and $-\infty$ dB (mute). This provides a talk over or voice over function. To increase intelligibility for announcements, input channels 1 and 2 shall also feature selectable speech filters.

Separate music inputs shall be available with their own input selector, volume control and tone control. The user shall be able to choose a music source like a CD player, radio like the Bosch PLN-DVDT, and set the level of music. It shall be possible to set the desired sound for the music source separate from the mic/line inputs.

It shall be able to indicate on the front panel the names and types of inputs and output zones. It shall be possible to indicate preset level on the front panel. It shall be possible to instruct a user to set all the controls to the green pins to set the system for their particular use. A second user shall be able to be instructed to set all controls to the red pins for their use. The mixer amplifier shall have a detachable label where the user shall be able to write down the correct names for inputs, music sources and zone names. After these shall be identified they shall be able to be mounted on the front protected by a clear window.

For easy integration with another PA system or a telephone paging system, a telephone / 100V emergency input with VOX activation shall be provided. It shall have its own preset volume control and overrides all other inputs, including call station and inputs 1 and 2.

The mixer amplifier shall have two zone outputs, via the front panel and optional wall panel the MUSIC shall be able to be switched on and off in the zones. Announcements from the PLE-2CS two zone call station shall be able to be routed to zone 1 or zone 2 or both. Announcements from the telephone/100v input or inputs 1 & 2 shall be routed to both zones. Input 1 shall be able to be used for a PLE-1CS all call call station or any other microphone or call station with a PTT contact. The unit also shall have a line output to connect the preamplifier output before zone selection, making it possible to create a third zone. This output shall be able to be switched to music only so that music on hold shall be able to be provided for the telephone system. Loop through input and output connections enable external sound processing equipment, such as an equalizer or the feedback suppressor, while keeping the balanced connection to the amplifiers.

A five segment LED bar will indicate output before zone selection. A headphone connector shall provide to monitor the output before zone selection.

EMC emission shall be according to EN 55103-1

EMC immunity shall be according to EN 55103-2

Mains power supply shall have a tolerance of $\pm 10\%$, 50/60 Hz

The battery power supply shall have a tolerance of -20% / $+10\%$

The frequency response shall be 30 Hz to 20 kHz ($+0/3$ dB @ 10 dB ref. rated output)

The Distortion shall be $<1\%$ @ rated output power, 1 kHz

The mic/line sensitivity shall be 1 mV for the microphone setting and 200 mV for line setting

The total dynamic range shall be more than 98 dB

The speech filter shall have a roll of frequency of -3 dB @ 315 Hz, The mixer amplifier shall fit in a 2 unit high standard 19 rack with a depth of 270 or more, excluding connectors.

The operating ambient temperature shall be -10 °C to $+45$ °C

Storage temperature shall be -40 °C to $+70$ °C

The mixer shall be a Bosch PLN-2MA120 / PLN-2MA240