BOSCH

Invented for life

PLE-2MAxx0-US Plena Mixer Amplifier

- ▸ **6 microphone/line inputs plus 3 music source inputs**
- ▸ **70 V, telephone and a call station input with priority & VOX**
- ▸ **2 zones and announcement only output**
- ▸ **Voice-activated emergency override**
- ▸ **High output power 120 and 240 Watts**
- ▸ **2-tone chime built in (7 more chimes optional with call station)**
- ▸ **Outputs for line out, music only out and insert point**
- ▸ **24 V backup power with built-in 24 V charger**
- ▸ **Separate tone controls for microphones and music sources**

These Plena mixer amplifiers are high performance, professional public address units with modern state-of-the-art features. They are easy to use, taking the complexity away from the user and putting it where it belongs, inside the equipment. Providing a crisp call or clear music is as easy as turning on the radio.

The amplifier is also surprisingly affordable, without sacrificing features such as ducking, priority and flexibility.

Functions

Microphone and line inputs

All mic/line inputs can be switched between microphone level and line level sensitivity. The inputs are balanced but can be used unbalanced. Phantom power can be switched on to provide power to condenser microphones.

Input channels 1 and 2 can take priority over all other microphone and music inputs:

- Input 1 can be activated by contact closure on the PTT (push to talk). A 2-tone chime can be configured to precede an announcement.
- Input 2 can be switched automatically if a signal is fed to the input, i.e., if someone speaks into the microphone (VOX activation).

When one or both inputs are configured to have priority, the amount of attenuation of the RCA input can be set between -2 dB (little attenuation) or -∞ dB (mute). This provides a talk-over or voice-over function. Input channels 1 and 2 also feature selectable speech filters to enhance the clarity of announcements.

Music inputs

Separate music inputs are available with their own input selector and volume control. The user can choose a music source like a CD player or radio (like the PLN-DVDT), and set the level of music.

You can set the desired sound for the music source separate from the mic/line inputs. So if the music needs boosted low frequencies, this does not lead to muddy sounding voices from the microphones. A truly unique feature in its class.

Personalized settings

More unique features are available such as detachable labels where the user can write the names for inputs, music sources and zones. These labels can then be mounted on the front, protected by the clear window.

Another useful feature is to indicate preferred settings on the front panel by inserting colored pins at the preset levels of all knobs. You can then instruct a user to set all the controls to the silver pins to configure the system for their particular use. A second user can set all controls to the red pins for their configuration.

Tone controls

The unique tone controls provide separate control for mic/line inputs and music inputs so that the microphone signals can be specifically optimized for excellent voice reproduction. Correspondingly, the tone controls for background music provide the equalization appropriate music reproduction.

In addition, the tone controls are not standard bass and treble controls. Our experience has led us to develop a tone control that can be used as a traditional tone control with high and low control, but has a powerful contour that addresses the problems found in real situations.

The tone control for the microphone and line inputs boost warmth in voices without boosting rumble and cuts rumble without loosing warmth in the low frequencies. In the higher frequencies, the tone control boosts sparkle without adding sharpness, but when cutting is first, cuts harshness and sharpness without reducing clarity.

The tone control for the music inputs boosts deep bass first without making the sound boomy, and cuts rumble without loosing warmth in the low frequencies. In the high frequencies the tone control is similar to the microphone inputs, with slightly different frequencies to suit music reproduction.

For easy integration with another PA system or a telephone paging system, a telephone / 70 V emergency input with VOX activation is provided. It has its own preset volume control and overrides all other inputs, including call station and inputs 1 and 2. The unit also has a line output to add amplifiers for larger systems, with more output power, this output can be switched to music only so that, for instance, music on hold can be provided for the telephone system. Insert (loop through) input and output connections enable external sound processing equipment, such as an equalizer or the Plena feedback suppressor, to be connected between the preamplifier and the power amplifier stages.

Power

These Plena mixer amplifiers come in 120 and 240 Watt output power options. This power is directly available on 25 V and 70 V constant voltage connections and on a low impedance connection for a 4 ohm load. Moreover, the amplifiers have a separate 70 V call-only output channel for addressing areas where only priority announcements are required. The call-only output can also be used for 3-wire remote, volume control override.

Zones

The mixer amplifier has two zone outputs. The music can be switched on and off in the zones via the front panel and optional wall panel. Announcements from the PLE-2CS two-zone call station can be routed to zone 1 or zone 2, or both. Announcements from the tel/70 V input or inputs 1 & 2 are routed to both zones. Input 1 can be used for a PLE-1CS all-call call station or any other microphone or call station with a PTT contact.

Output status

An LED VU meter displays the master output level. A headphone jack, below the VU meter, provides the mixer output signal before zone selection so that it is possible to listen to the output before the signal is sent to the zone. For total reliability and ease of use, a limiter is integrated into the output stage to restrict output if the user applies too much signal.

Controls and indicators

Front

- On/off switch
- Power on LED
- LED VU meter for master output (LEDs for -18, -12 -6, -3, 0 dB)
- Master volume knob
- Six volume knobs for microphone inputs
- Knob for treble level
- Knob for bass level
- Headphone jack
- Two zone selector buttons
- Background music button

Back

- Dip switches
- Chime level
- Ducking level
- Tel/70 V volume control

Interconnections

See Technical Specifications.

Certifications and Approvals

EMC emission	acc. to EN 55103-1
EMC immunity	acc. to EN 55103-2

Installation/Configuration Notes

Rear view

Parts Included

Quantity	Components
1	PLE-2MA120-US / PLE-2MA240-US Plena Mixer Amplifier
1	Power cord
1	Manual
1	Set of 19"mounting brackets

Technical Specifications

Electrical

Mains power supply

Voltage	115 - 230 VAC ±10%, 50/60 Hz
Inrush Current PLE-2MA120-US	8/16 A (230/115 VAC)
Inrush Current PLE-2MA240- US	9/19 A (230/115 VAC)

Battery power supply

Voltage	24 VDC ±15%
Current PLE-2MA120- US	6 A
Current PLE-2MA240- US	12 A
Charge current	0.5 ADC
Charge float voltage	27.3 VDC

Power consumption

PLE-2MA120- US (mains)	400 VA
PLE-2MA240- US (mains)	800 VA

Performance

Frequency response	50 Hz to 20 kHz (+1/-3 dB @ -10 dB ref. rated output)
Distortion	<1% @ rated output power, 1 kHz
Low Control	Max -12/+12 dB (frequency is setting dependent)
High Control	Max -12/+12 dB (frequency is setting dependent)

RJ-45 input	**2 x**
Call station input	For PLE-2CS(MM)
Wall panel input	For PLE-WP3S2Z
Mic/Line input	**6 x**
Input 1	5-pin Euro style, balanced, phantom
Input 2-6	3-pin Euro style, balanced, phantom
Sensitivity	1 mV (mic); 200 mV (line)
Impedance	>1 kohm (mic); >5 kohm (line)
S/N (flat at max volume)	63 dB
S/N (flat at min volume/muted)	> 5 dB
Dynamic range	93 dB
S/N (flat at max volume)	>63 dB (mic); >70 dB (line)
S/N (flat at min volume/muted)	>75 dB
CMRR (mic)	>40 dB (50 Hz to 20 kHz)
Headroom	>17 dB
Speech filter	-3 dB @ 315 Hz, high-pass, 6 dB/oct
Phantom power supply	16 V via 1.2 kohm (mic)
Speech filter	-3 dB @ 315 Hz, high-pass, 6 dB/oct
VOX (input 2)	Attack time 150 ms; release time 2 s
Music inputs	**3x**
Connector	RCA, stereo converted to mono
Sensitivity	200 mV
Impedance	22 kohm
S/N (flat at max volume)	>70 dB
S/N (flat at min volume/muted)	>75 dB
Headroom	>25 dB
Emergency / telephone	**1 x**
Connector	7-pin, Euro style pluggable screw terminal
Sensitivity tel	1 V maximum
Sensitivity 70V	70 V maximum
Impedance	>10 kohm
S/N (flat at max volume)	>65 dB
VOX	Threshold 50 mV; attack time 150 ms; release time 2 s
Insert	**1 x**
Connector	RCA
Nominal level	1 V
Impedance	>10 kohm

Master/music output	**1 x**
Connector	3-pin Euro style, balanced
Nominal level	1 V
Impedance	<100 ohm

Loudspeaker outputs 25 / 70 V and 4 ohm*	
Connector	Screw, floating
Max / rated PLE-2MA120-US	180 W / 120 W
Max / rated PLE-2MA240-US	360 W / 240 W

Loudspeaker output 4 ohm*	
Connector	Euro style pluggable screw terminal, floating
PLE-2MA120-US	31 V (120 W)
PLE-2MA240-US	44 V (240 W)

* Subtract 1 dB for 24 V battery operation.

Mechanical

Dimensions (H x W x D)	100 x 430 x 270 mm (19" wide, 2U high)
Mounting	Stand-alone, 19" rack
Color	Charcoal
Weight (PLE-2MA120-US)	Approx. 23.2 lb
Weight (PLE-2MA240-US)	Approx. 27.6 lb

Environmental

Operating temperature	+14 ºF to +131 ºF
Storage temperature	-40 ºF to +158 ºF
Relative humidity	<95%
Acoustic noise level of fan	<40 dB SPL @ 1 m temperature controlled

Ordering Information

PLE-2MA120-US Plena Mixer Amplifier 120 W	**PLE-2MA120-US**
PLE-2MA240-US Plena Mixer Amplifier 240 W	**PLE-2MA240-US**