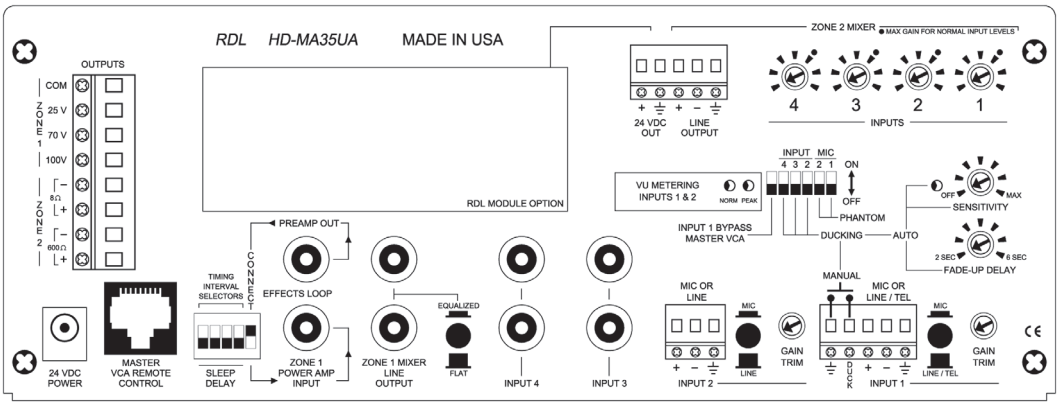
HD-MA35UA
INSTALLATION AND OPERATION

INTRODUCTION

Congratulations on your selection of an RDL HD-Series Ultra-High-Efficiency commercial mixer amplifier. The HD-MA35UA is part of the world's first full-featured environmentally conscious "green" mixer amplifier series for commercial installations. This product includes studio quality microphone input stages, line-level transformer isolation, equalization, remote control capability and integral analog compression coupled to sonically pleasing analog-filtered high efficiency Class D output stages. An internal low-power-consumption processor monitors usage demands to completely shut down internal circuitry for maximum power conservation and extremely low long-term operating cost. The HD-Series mixer amplifiers are designed and manufactured in the U.S.A. using the most advanced automated manufacturing and testing processes for years of reliable high performance and cost savings.

CONNECTIONS

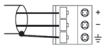
HD-MA35UA 25/70/100 V



Connections are made on the rear panel. All connections are on detachable terminal blocks or connectors. The Zone 2 mixer, Inputs 1 and 2 gain trimmers and VU-meter, ducking controls and assignments, phantom voltage selectors and sleep mode delay timer settings are also provided on the rear panel. The Zone 1 mixer, tone controls, indicators and power button are on the front panel.

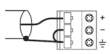
INPUT WIRING

Balanced MIC or LINE source connected using a single-pair shielded audio cable



Balanced LINE signal from phone PBX or audio transformer

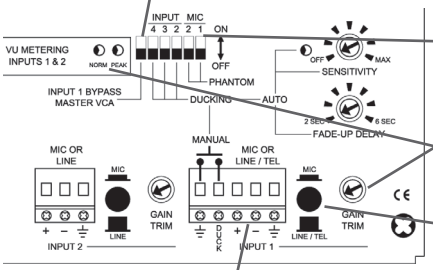
Unbalanced MIC or LINE source connected using a single-conductor shielded audio cable



Four inputs may be connected. Each input is available on the primary Zone 1 front-panel mixer and on the Zone 2 rear-panel mixer. If used, the paging source is usually connected to Input 1.

INPUT 1

INPUT 1 BYPASS MASTER VCA
If the INPUT 1 (paging) level is to be controlled by a master VCA remote control, set the switch OFF (down). If a remote control is *not* intended to adjust INPUT 1, set the switch ON (up). In BYPASS, pages are heard even if the master is off.



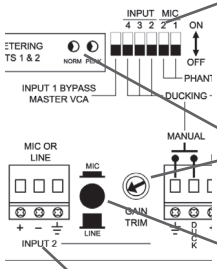
PHANTOM VOLTAGE
If a condenser mic may be connected to INPUT 1, set the phantom voltage ON (switch up).

GAIN TRIM
Feed a normal signal level into INPUT 1 and adjust the GAIN TRIM for maximum brightness of the NORM green LED with occasional flashing of the red PEAK LED. (Disconnect INPUT 2 during this adjustment.)

MIC or LINE Gain
Set the Input Gain to MIC or LINE/TEL according to the input signal connected.

INPUT 1
Connect a MIC or LINE source. This is normally a paging mic or the line-level paging output from a phone PBX. The line-level input is transformer balanced (providing galvanic isolation) and may be connected balanced or unbalanced.

INPUT 2



PHANTOM VOLTAGE
If a condenser mic may be connected to INPUT 2, set the phantom voltage ON (switch up).

GAIN TRIM
Feed a normal signal level into INPUT 2 and adjust the GAIN TRIM for maximum brightness of the NORM green LED with occasional flashing of the red PEAK LED. (Disconnect INPUT 1 during this adjustment.)

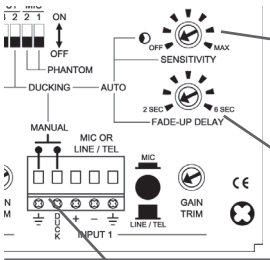
MIC or LINE Gain
Set the Input Gain to MIC or LINE according to the input signal connected.

INPUT 2
Connect a MIC or LINE source. The line-level input is active balanced and may be connected balanced or unbalanced.

The front-end preamplifier stages for Inputs 1 and 2 are each equipped with a gain trimmer. The dual-LED VU meter displays the signal level for Inputs 1 and 2 following the preamplifiers. This allows each input gain trimmer to be set properly for the optimum signal-to-noise ratio, avoiding the possibility of input clipping common to mixers with unmetered input stages.

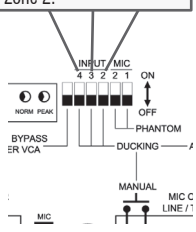
PRIORITY PAGING

INPUT DUCKING SELECTOR
Select any or all inputs (2, 3 and/or 4) to be ducked when a paging priority is detected (VOX activated by audio signal on INPUT 1, or MANUAL activation by an external switch. Selected inputs are ducked only in Zone 1 (the primary amplified output). Set the switch ON (switch up) to duck the input in Zone 1; set the switch OFF to prevent ducking. Inputs are not ducked in Zone 2.



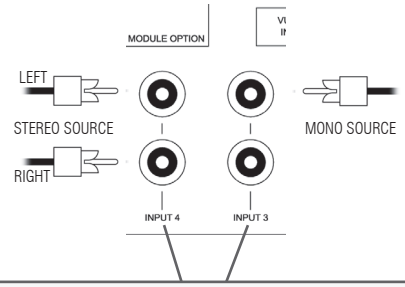
VOX (VOICE-ACTIVATED PRIORITY)
If a paging signal is to automatically "duck" (fade down) other audio inputs, feed a normal paging signal into INPUT 1 and adjust the SENSITIVITY trimmer until the LED flashes regularly. Set the SENSITIVITY trimmer fully CCW to disable the VOX function.

FADE-UP DELAY
Adjust the FADE-UP DELAY trimmer to delay the start of the audio fade-up following the release of an external manual priority switch and/or VOX priority detection.



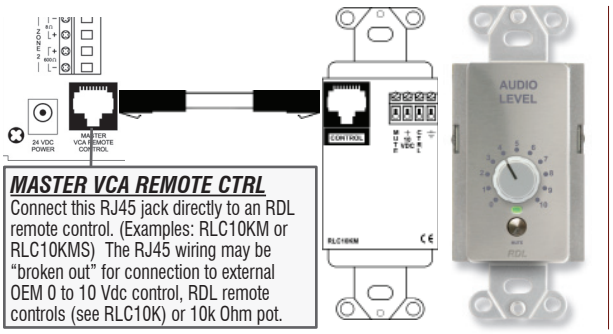
MANUAL PRIORITY
If a swich (such as a paging mic push-to-talk switch) should "duck" (fade down) other audio inputs, connect the switch to the DUCK and Ground terminals.

INPUTS 3 & 4

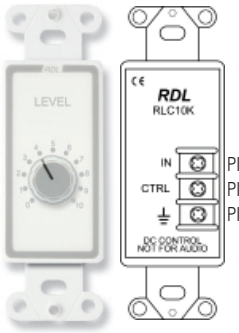


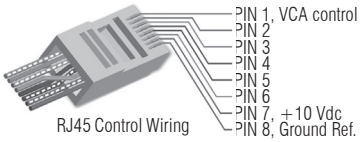
INPUTS 3 & 4
Connect a mono or stereo standard unbalanced -10 dBV audio source to INPUTs 3 and/or 4. The two input jacks associated with each input provide active summing of the left and right channels, thereby preserving the stereo separation of the audio source.

REMOTE CONTROL FOR ZONE 1 AMPLIFIER OUTPUT



MASTER VCA REMOTE CTRL
Connect this RJ45 jack directly to an RDL remote control. (Examples: RLC10KM or RLC10KMS) The RJ45 wiring may be "broken out" for connection to external OEM 0 to 10 Vdc control, RDL remote controls (see RLC10K) or 10k Ohm pot.



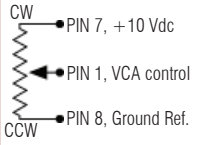


External 0 to 10 V Control

Pin 1	0 to 10 V
Pin 8	Ground Reference

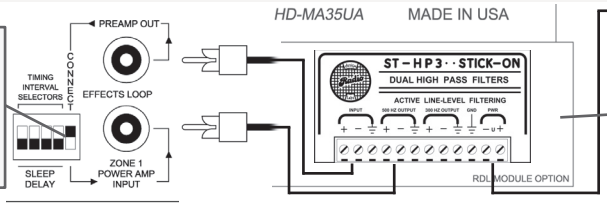
WIRING "Break-out"

External 10k Ohm Pot.



EFFECTS LOOP

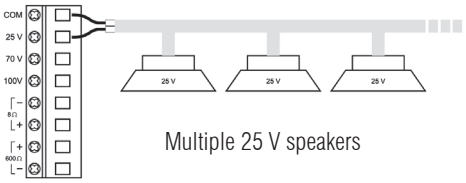
EFFECTS LOOP CONNECT SWITCH
This switch is normally left in the ON (up) position when the effects loop is not used. The switch connects the preamp output from the Zone 1 mixer directly to the input of the Zone power amp stage. Set this switch OFF (down) to insert external processing.



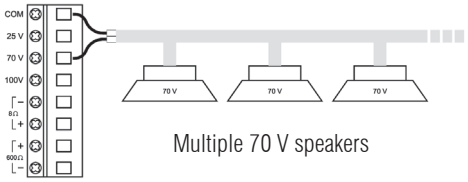
MODULE POWER
24 Vdc, 100 mA is available to power external modules.

MODULE MOUNTING AREA
This area is reserved for mounting RDL STICK-ON or TX-Series modules. This example shows a high-pass filter to protect horn loudspeakers from bass overload. Other effects possibilities include equalizers, mixers, crossovers or processors.

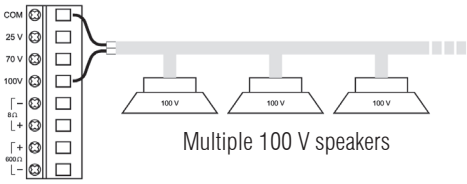
ZONE 1 OUTPUT CONNECTIONS



Multiple 25 V speakers



Multiple 70 V speakers



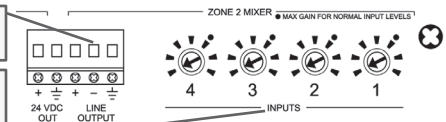
Multiple 100 V speakers

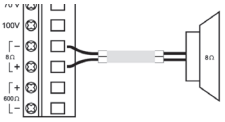
Unplug the power supply and remove the output terminal security cover. Connect constant voltage speakers to a single output voltage tap. Do not connect speakers with dissimilar voltages to multiple output taps. Total connected load must not exceed 35 W. Upon completion of the output terminal block wiring, re-install the cover over the terminal block prior to plugging in the power supply.

ZONE 2

LINE OUTPUT
Active balanced

INPUTS
Adjust for desired output level





Connect an 8 Ohm speaker or multiple speakers configured to present an 8 Ohm load to the amplifier.

The Zone 2 mixer operates from the same 4 inputs as the front-panel Zone 1 mixer. Ducking assignments do not affect the signals in Zone 2. Each input source should be adjusted to the desired output level. Turn down unused inputs to remove them from the mix. Three Zone 2 outputs are provided. The LINE OUTPUT is balanced and may be used to feed the input of an other power amplifier. The 600 Ohm output is transformer isolated (providing galvanic isolation) to drive a phone PBX paging input. The 8 Ohm output drives an 8 Ohm speaker with up to 4 W RMS.

AUTOMATIC SLEEP MODE

10 Minutes

40 Minutes

70 Minutes

100 Minutes

20 Minutes

50 Minutes

80 Minutes

110 Minutes

30 Minutes

60 Minutes

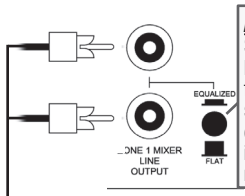
90 Minutes

120 Minutes

Disable (mixer-amplifier remains ON, does not enter standy mode)

Upon loss of audio at all inputs, a timer starts. At the completion of the timing interval, the mixer amplifier enters the standby mode. All circuits not needed to detect audio presence are shut off. When audio is detected, all circuits turn on and wait for a loss of audio to restart the timing interval. The timer may be disabled if required by system specifications.

ADDING ZONES



EQUALIZATION
Set the switch to EQUALIZED (in) if the front-panel tone controls should affect the line output; Set to FLAT (out) if the tone controls should not affect the line output.

ADDITIONAL ZONE AMPLIFIERS
Connect the LINE OUTPUT to the line input of one or multiple additional RDL amplifiers to permit the Zone 1 mixer to feed other zones. The LINE OUTPUT is not controlled by the master VCA remote control so each additional zone may have its own master level control. The LINE OUTPUT may be set to provide "flat" audio or to allow equalization by the front-panel tone controls. The LINE OUTPUT may also be used to feed recording equipment or an audio distribution amplifier.

OPERATION

TONE CONTROLS
Adjust BASS and TREBLE as desired.

POWER BUTTON
Momentary pushbutton toggles the amplifier between ON and STANDBY.

POWER INDICATOR
Glows dimly when unit is powered in standby (sleep) mode; glows bright when amplifier is on; flashes during power-up.

COMPRESSION INDICATOR
LED flashes when audio compressor is acting on the amplified audio.

MIXER LEVEL 1 - 4
Adjust each level control for the desired output level. If a master remote control is connected, it will adjust the final mixer output level. (Note: If the INPUT 1 VCA Bypass is enabled (See INPUT 1 Settings), a connected remote control will NOT adjust the paging signal on INPUT 1. It will be controlled only by the front panel INPUT 1 level control.)

SIGNAL PRESENT 1 - 4 The green LED glows when audio is present at the input. The indication is not affected by the setting of the mixer level control.