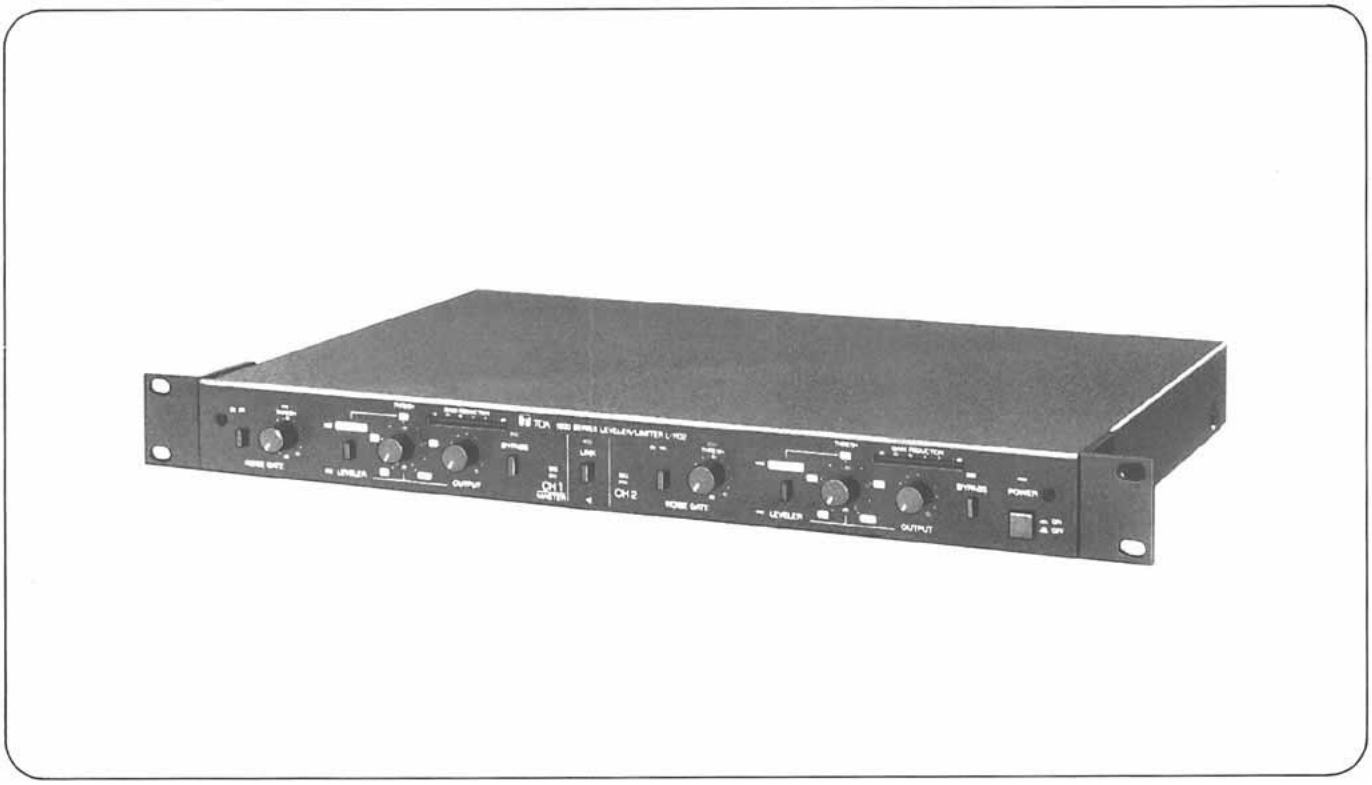
TOA

Operating Instructions

DUAL LEVELER/ LIMITER L-1102

TOA 1000 series



CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION

TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL

THE LIGHTNING FLASH WITH ARROWHEAD WITHIN A TRIANGLE IS INTENDED TO TELL THE USER THAT PARTS INSIDE THE PRODUCT ARE A RISK OF ELECTRIC SHOCK TO PERSONS.

THE EXCLAMATION POINT WITHIN A TRIANGLE IS INTENDED TO TELL THE USER THAT IMPORTANT OPERATING AND SERVICING INSTRUCTIONS ARE IN THE PAPERS WITH THE APPLIANCE.

Please follow the instructions in this manual to obtain the optimum results from this unit. We also recommend that you keep this manual handy for future reference.

TOA Corporation

Contents

Handling Precautions

1. Operating power voltage is local mains voltage plus or minus ten percent.
2. Keep chemical and beverages away from the unit.
3. To avoid severe electric shocks and possible catastrophic damage, always refer servicing to qualified technical service personnel when component malfunctions occur.

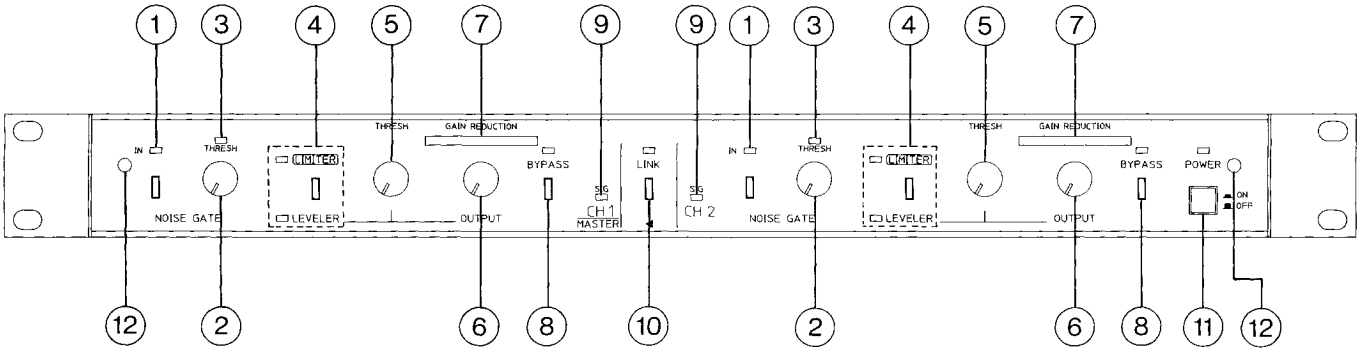
General Description

The TOA L-1102 functions as a leveler or as a limiter, which can be selected with a switch. It contains two leveler/limiter units (CH1 and CH2), and each channel is equipped with a noise gate. The L-1102 is mountable in an EIA standard 19" rack (1-unit size).

Features

- Dual leveler/limiter unit system. Either function can be selected for each unit with a switch.
- If the limiter is selected, speakers can be protected regardless of amplifier gain because the power amplifier output is used as a sense input.
- If the leveler is selected, an output level can be adjusted within the range of 0 dB ~20 dB.
- Gain reduction meter to check the unit's operation.
- Noise gate for each channel.
- Electronically-balanced input and output. Optional transformers LT-101 (input) and LT-102 (output) enable transformer-balanced input and output.
- Security cover.

■ Nomenclature < Front Panel >



① **Noise Gate Switch and Gate Standby Indicator**
Press this switch to put the noise gate in standby mode, and the standby indicator lights. To disable the noise gate, press the switch again, and the indicator is extinguished.

② **Noise Gate Threshold Control**
Sets up the threshold of noise gate input within the range of from -80 dB to -40 dB.

③ **Noise Gate Indicator**
Lights when an input signal level is lower than a predetermined threshold value, and is extinguished when exceeding the threshold value.

④ **Leveler/Limiter Select Switch and Selection Indicator**
The switch selects either a leveler or a limiter. The leveler's indication lamp lights if the leveler is selected, and the limiter's indication lamp lights if the limiter is selected.

⑤ **Leveler/Limiter Threshold Control**
Adjusts the leveler's threshold level within the range of from -40 dB to 0 dB, or the limiter's threshold level from 1V to 100V rms.

⑥ **Output Level Control**
This control is effective only when the leveler is selected. It adjusts the output signal level within the range of 0 dB~20 dB (from "0" to "10" in 2 dB steps).

⑦ **Gain Reduction Meter**
Indicates the output comperession with respect to the input for a maximum of 30 dB.

⑧ **Bypass Switch and Bypass Indicator**
When this switch is pressed, as indicated by its indicator, all input signals bypass the unit for direct output.

⑨ **Signal Indicator**
Lights when an input signal level exceeds -30 dB.

⑩ **Stereo Linkage Switch and Indicator**
Press this switch (its indicator lights) when stereo L and R signals are input into both channels, CH1 and CH2.

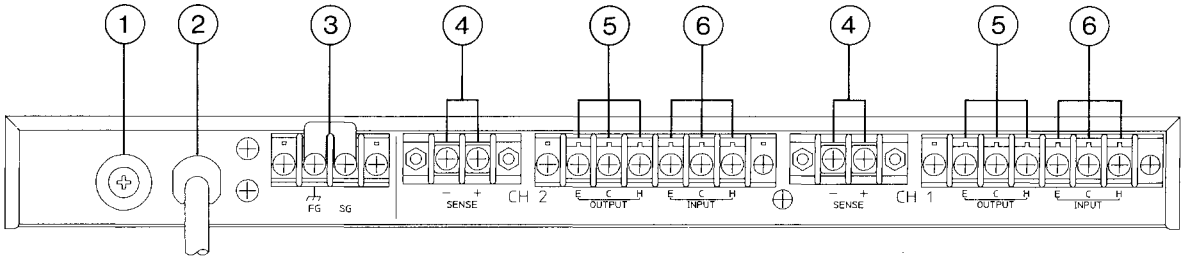
Operation of both channels depends on the leveler/limiter threshold control setting for CH 1. All other switches and controls can be used independently for operation of each channel.

[Note] : For stereo applications, the same function (i.e. either a leveler or limiter) must be selected for both channels.

⑪ **Power Switch and Indicator**
Press this switch to turn power ON (indicator lights). To turn power OFF, press this switch again (indicator is extinguished).

⑫ **Security Cover Mounting Hole**
Used to mount the security cover with the supplied screws to avoid accidental changes in control and switch settings.

■Nomenclature < Rear Panel >



① **AC Fuse Holder**
When replacing, be sure to use the fuse of specified rating and type to avoid the possibility of fire.

② **AC Power Cord**
Plug this cord into the wall AC outlet.

③ **Ground Screw Terminal**
Hum can result from a ground loop to be formed when the L-1102 is connected to other equipment. In such cases, cut the loop by removing a shorting piece. Usually, mount the shorting piece to the terminal.

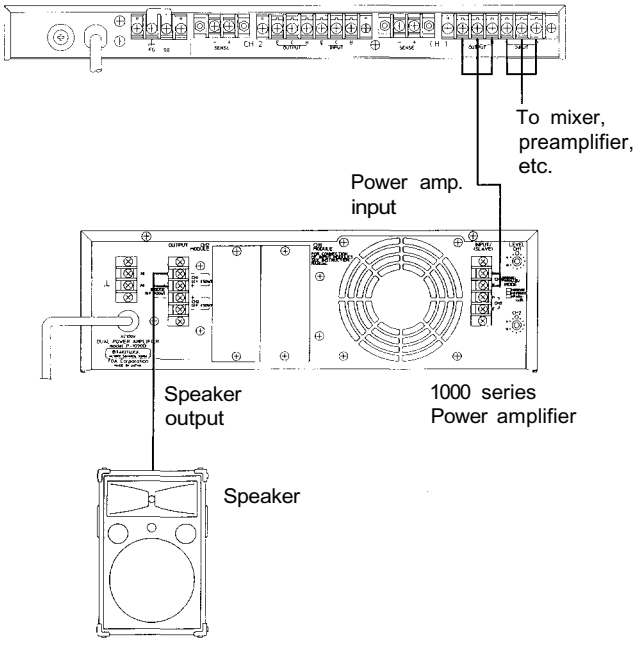
④ **Sense Input Screw Terminal**
Connect this terminal to the power amplifier output of each channel when in "limiter" mode. See to it that the polarities of power amplifier output and sense input terminal are matched.

⑤ **Output Screw Terminal**
The output terminal is electronically-balanced. Place the supplied shorting piece between E and C to convert into unbalanced type.

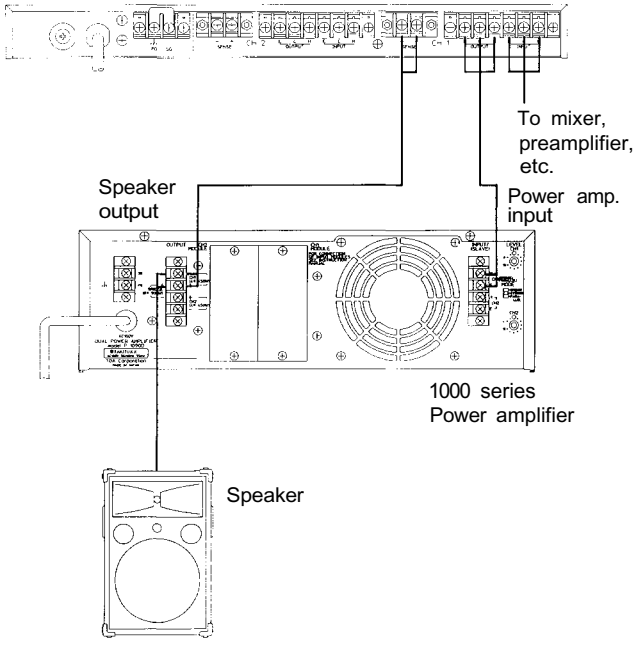
⑥ **Input Screw Terminal**
The input terminal is electronically-balanced. Place the supplied shorting piece between E and C to convert into unbalanced type.

■Connection Examples

1. If using as a leveler



2. If using as a limiter

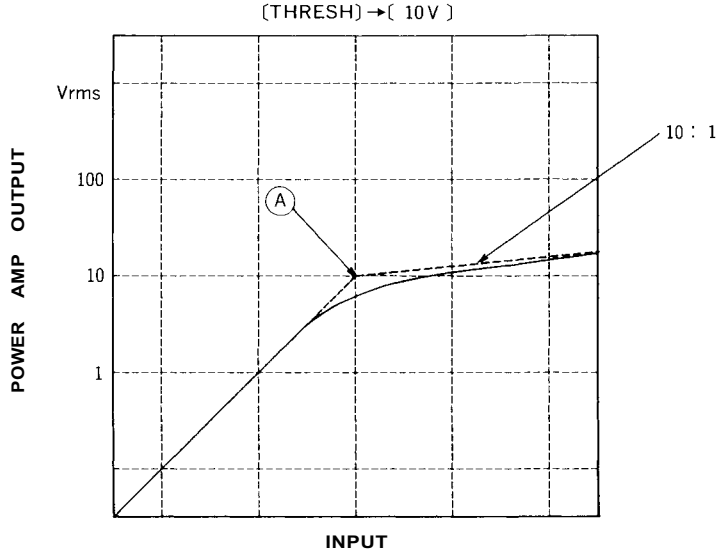


Leveler/Limiter Threshold Setting

1. Limiter (Speaker protection)

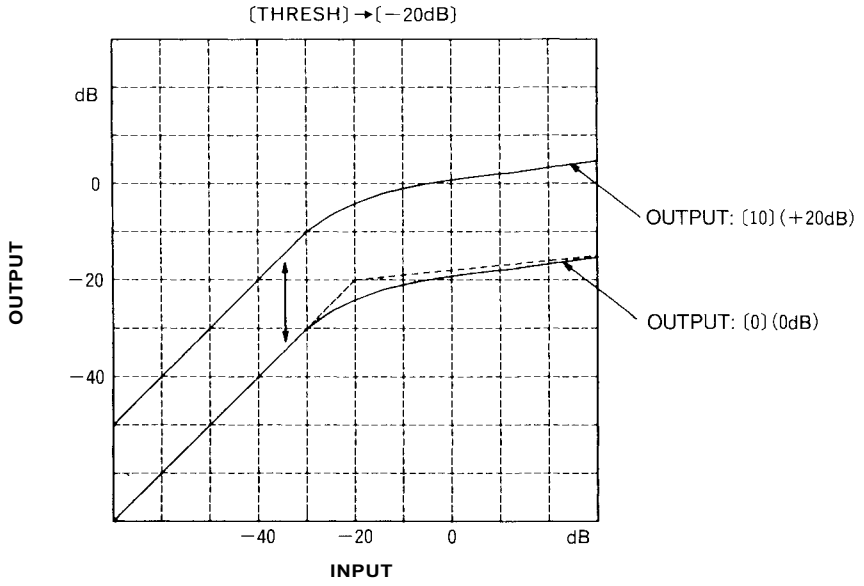
Power amplifier output is input into the sense input screw terminal as a sense signal. If the sense signal level exceeds a predetermined threshold value, the limiter compresses the output.

As can be seen from a compression curve in the figure below, the output amplitude is linear with respect to the input up to the threshold (A) and gentle and constant thereafter for compression in the ratio 10 (input) to 1 (output). (The leveler/limiter threshold control knob points to the threshold A.)



2. Leveler

If the input signal level exceeds a predetermined threshold value, the output is compressed. The overall output level can be adjusted within the range of 0 dB~20 dB ("0"~"10" in 2 dB steps) using the output level control.



■ Matching Transformer Mounting

CAUTIONS
THESE SERVICING INSTRUCTIONS ARE FOR USE BY QUALIFIED PERSONNEL ONLY. TO AVOID ELECTRIC SHOCK DO NOT PERFORM ANY SERVICING OTHER THAN THAT CONTAINED IN THE OPERATING INSTRUCTIONS UNLESS YOU ARE QUALIFIED TO DO SO. REFER ALL SERVICING TO QUALIFIED SERVICE PERSONNEL

The L-1102's input and output are electrically balanced. These can be converted to transformer balanced types using the optional matching transformer LT-101 (input) and LT-102 (output).

1. Set the power switch to OFF and unplug the AC cord from a wall outlet.
2. Remove ten side panel screws to remove the case.
3. For input conversion, first fix two sleeves (supplied with the transformer) to the left-hand side, as viewed from the front, by tightening two screws from the outside of a bottom chassis, and then place the input transformer on the sleeves and fix it using two screws. See Fig. 1. After installing the transformer, detach connector CN35 from CN1, reconnect it to connector (a) at the transformer side, and connect connector (b) coming from the transformer to CN1, as shown in the figure.
4. Similarly, install the output transformer at the right-hand side for output conversion. And then, detach connector CN2 from CN36, reconnect it to connector (c) at the transformer side, and connect connector (d) coming from the transformer to CN36.

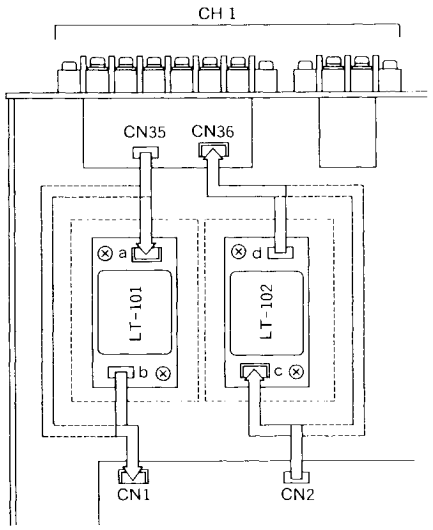


Fig.1

5. Replace the case.

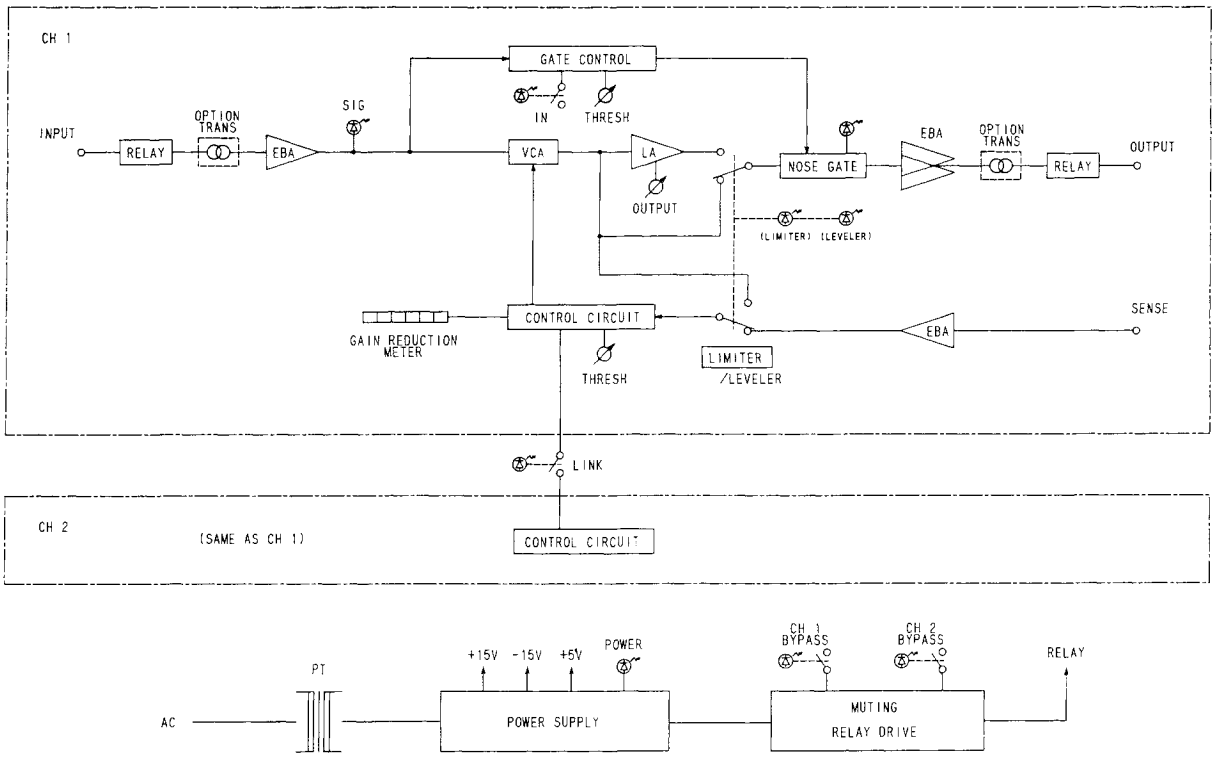
[Note] :
(1) Follow the same procedure as the above to enable transformer-balanced input and output for channel 2.
(2) When installing the transformer, never touch other internal components other than those described above as severe electric shocks may result.

Transformer Specifications

Model	LT-101	LT-102
Impedance	10kΩ : 10kΩ	600Ω : 600Ω
Frequency response	30Hz~20kHz(±0.15dB)	30Hz~20kHz(±0.15dB)
Constant loss	Within 1.5dB (1kHz)	Within 1.5dB (1kHz)
Distortion	Under 0.2% (+5dB*, 50Hz)	Under 0.2% (+5dB*, 50Hz)

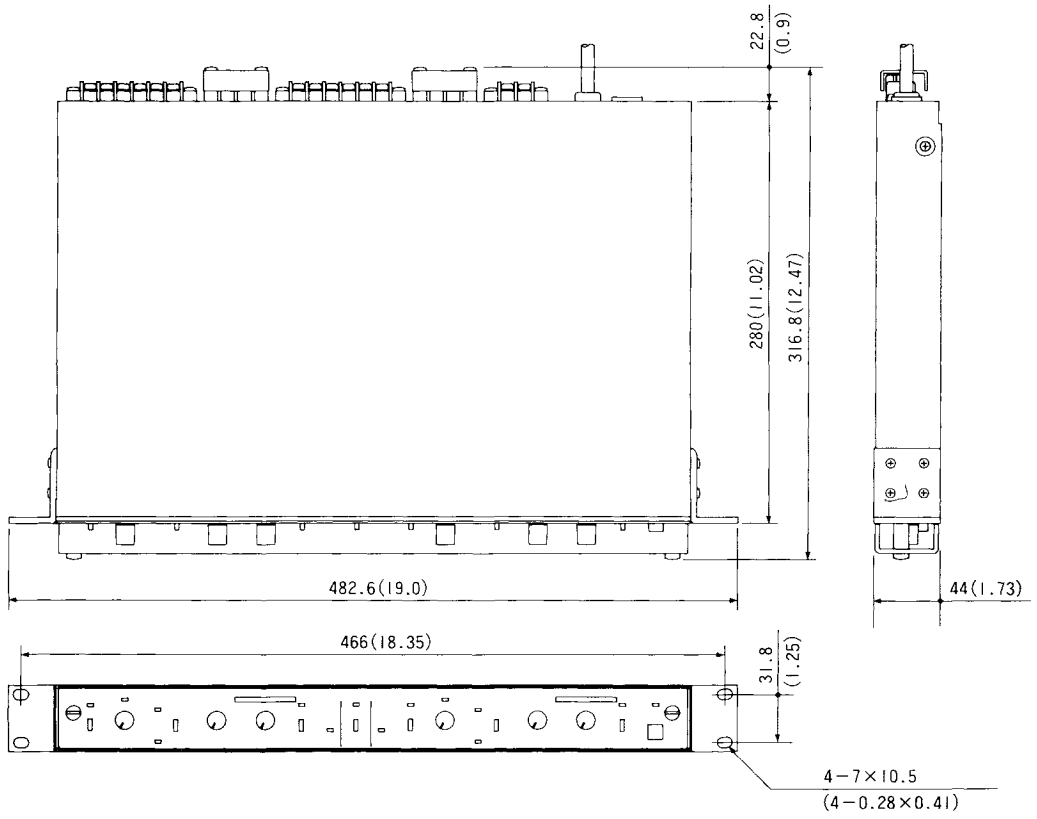
* 0dB = 0.775V RMS
* Specifications are subject to change without notice.

■Block Diagram



■Appearance

Unit mm (in.)



■Specifications

Power Requirements
AC Mains, 50 Hz/60 Hz
Power Consumption
14W (120V AC version)
15W (220/240V AC version)
Frequency Response
20~20kHz (±1 dB)
Total Harmonic Distortion
Under 0.1% (1 kHz, rated output)
Under 0.2% (1 kHz, 30 dB compression)
Input
+4 dB* for 10kΩ load
(electronically balanced)
Output
+4 dB* for 600Ω load
(electronically balanced)
Maximum Input Level
+20 dB*
Maximum Output Level
+20 dB*
Sense Input
100kΩ
(electronically balanced)
Noise Level
Under —92 dB* (IHF-A)
Threshold Level Range
Leveler: —40 to 0 dB*
(with respect to input)
Limiter: 1~100V rms
(with respect to sense input)
Noise Gate Threshold Range
—80 to —40 dB*
Adjustable Output Range
0 to +20 dB
Attack Times
Dependent on input (or sense input) signal
Release Times
Dependent on input (or sense input) signal
Finish
Black
Dimensions
482.6(W)X44.0(H)X316.8(D) mm
[19.00X1.73X12.47 in.]
Weight
4kg (8.8 lb.)

* 0dB = 0.775V RMS
* Specifications are subject to change without notice.

■Accessories

Security cover ·····1
Security cover mounting screws ·····2
Fuse 250V 0.3A (120V AC version) ·····1
Fuse 250V T100mA 220/240V AC version) ·····1
Shorting pieces ·····4
Operating instructions ·····1
Rack mounting screws ·····4

TOA Corporation
KOBE, JAPAN

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