

ARCHITECT'S & ENGINEER'S SPECIFICATION

The ambient noise sensing automatic level control shall be constructed in an all steel chassis requiring no more than 1.75" of vertical rack space. The ALC shall have a UL approved wall mount power supply. The unit shall be designed to mount in a standard 19" EIA rack.

The ALC shall have provision for 3 page inputs and 1 background music input. Application of an audio signal to any page input shall automatically mute the background music. The 3 page inputs shall each have a different level of priority (3 levels of priority). Applying an audio signal to a page input shall automatically mute any audio signals applied to lower level inputs. Input #3 shall have a hardwire bypass for power off conditions.

The ALC shall have Threshold, Ratio, and Gain Limit controls to adjust the ambient noise sensing automatic level control function.

The ALC shall provide a 2:1 compressor in the audio signal path. All audio exiting the ALC shall be processed by the compressor. The ALC shall have a peak stop auto gain limit control. The auto gain limit control shall be adjustable in 3dB steps, from 6dBm to +21dBm.

The ALC shall have a front panel accessible switch to allow minimum, automatic, and maximum settings, to allow testing of all output operating parameters.

The ambient noise sensing automatic level control shall be PROTECH AUDIO CORPORATION MODEL 65306.

SPECIFICATIONS, MODEL 65306

INPUT SECTION

Input Gain, Page.....	Off To 20dB Gain
Input Gain, Music.....	Off To 20dB Gain
Threshold, Priority Circuit.....	-25dBv
Mute Attenuation.....	70dB, Min.
Maximum Input Level.....	+18dBv
Input Impedance, Page.....	10K Ohms Nominal
Input Impedance, Music.....	10K Ohms Nominal

AUTOMATIC GAIN SECTION

Sensing Input Impedance, Speaker Input.....	10K Ohms Nominal
Sensing Input Impedance, Microphone Input.....	1100 Ohms Nominal (150-600 Ohm Low Z Mic)
Threshold Adjustment Range.....	-85dBv To 0dB
Ratio Range.....	1:1 To 4:1
Auto Gain Limit Range.....	6dB To 21dB
Attack Time.....	2 Seconds To 60 Seconds
Release Time.....	2 Seconds To 60 Seconds

OUTPUT SECTION

Compression Ratio.....	2:1
Output Limit Range.....	0dBv To +20dBv
Maximum Output Level.....	+20dBv

OVERALL SPECIFICATIONS

Set-up Test Switch.....	Min = Without Auto Gain, Max = Maximum Setting Auto Gain Auto = Standard Operating Mode
Power Failure Mode.....	Input #3 Hardwired To Output.
Distortion + N.....	0.15% Maximum
Noise.....	72dB Below +4dBv Out
Frequency Response.....	30Hz To 20KHz, ±0.5dB
Operating Temperature.....	-30 To +70 Degrees C
Power Requirement.....	0.5 Amps/120VAC
Dimensions.....	1.75"H x 19"W x 7"D
Shipping Weight.....	Approx. 10Lbs.

Protech Audio Corporation
PO Box 597, 192 Cedar River Road
Indian Lake, New York 12842
Voice 518-648-6410 Fax 518-648-6395
Web - www.protechaudio.com

PROTECH®

MODEL 65306

AMBIENT NOISE SENSING LEVEL CONTROL SYSTEM



Features

- Automatically Adjusts Sound System Level To Compensate For Ambient Noise
- Four Individually Adjustable Inputs With Priority Settings.
- Built-In Compressor for Consistent Paging Levels.
- Output Peak Limiter For Positive Speaker Protection.
- Uses Speakers or Microphones for Sensing.
- Selectable Metering of Output or Gain Functions.
- Min/Auto/Max Switch for Easy Test and Alignment.
- Plug-In Construction Allows Replacement Without Rewiring.
- Extended Temperature Range For Mass Transit Applications.

The Protech Audio Model 65306 is designed for use in public address/background music systems, where clarity and volume of announcements is critical. The 65306 is designed to listen to ambient noise, and automatically adjust PA levels to compensate for variations.

The Model 65306 is designed to provide the user with a complete public address input device. The unit consists of four separate sections.

The input section allows for 4 separate input signals. Each input level is individually adjustable, and all four have built-in priority override of lower level inputs.

The noise-sensing section allows the unit to listen to ambient noise conditions in the public address area, and vary the output level of the Model 65306, to compensate for variations in noise level.

The VOX/Timer section allows the unit to automatically switch between inputs, or mix inputs, and switch sensing speakers (not usable with BGM) between the sensing input of the 65306, and the output of the public address power amplifier(s).

The output section consists of a compressor circuit, to allow consistent level paging signals, and an adjustable peak limiter, to prevent overloading of the paging system power amplifiers and speakers.

The unit also incorporates a number of user definable features that allow the user to tailor the performance of the Model 65306, to fit a wide variety of paging applications.

The construction of the Model 65306, from the UL approved wall-mount power supply, to the plug-in electronic section, to the MIN/AUTO/MAX test and set-up switch, allows the user to rely on the unit for easy set-up, and years of reliable service.

PROTECH®

Engineering Data 1/02

AUTOMATIC LEVEL CONTROL

INPUT SECTION

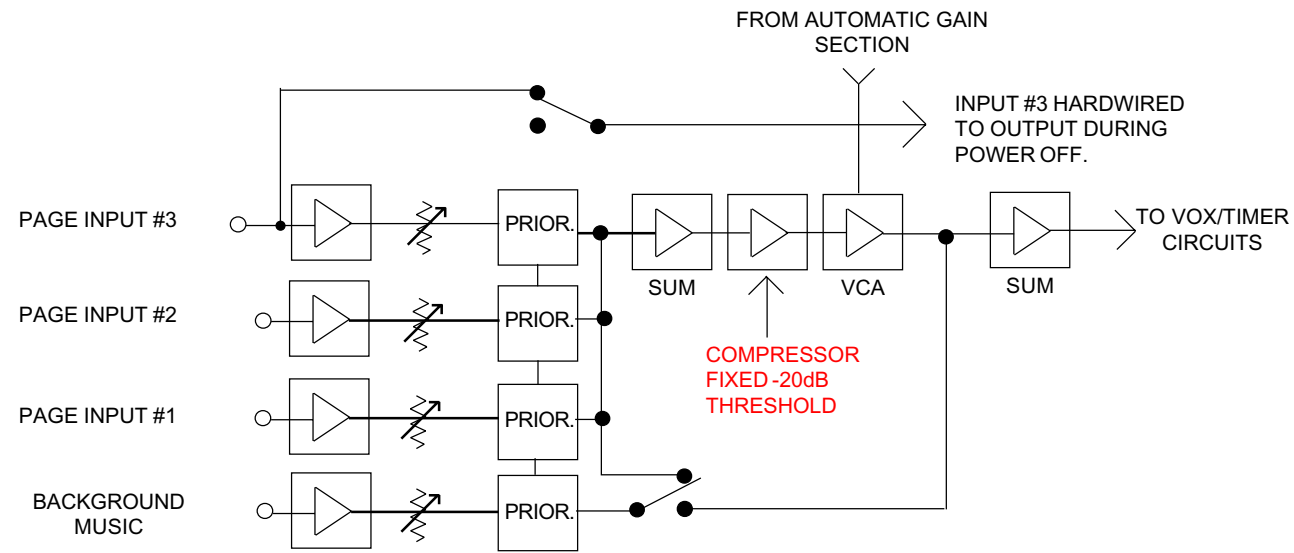
The input section of the Model 65306 is designed to function as a mixer, with priority switching. There are 4 line level inputs, each with adjustable gain.

The lowest priority level input is designed to accommodate background music. This input can be configured to enter the mixing buss before or after the noise controlled gain section.

The highest priority level input is hardwired to a bypass relay. In the event of a power failure, this input signal will automatically pass directly thru the unit, to the output.

Inputs 1 and 2 are similar to input 3, but without the bypass relay. Any audio arriving at inputs 1, 2, and 3, will activate a mute of any and all lower priority level inputs. This allows emergency announcements to override any other audio that may be present.

All 4 inputs have front panel gain control knobs, to allow level adjustments and matching. Each of the 3 page inputs has a push-on jumper that may be removed to defeat the priority function on a particular input.



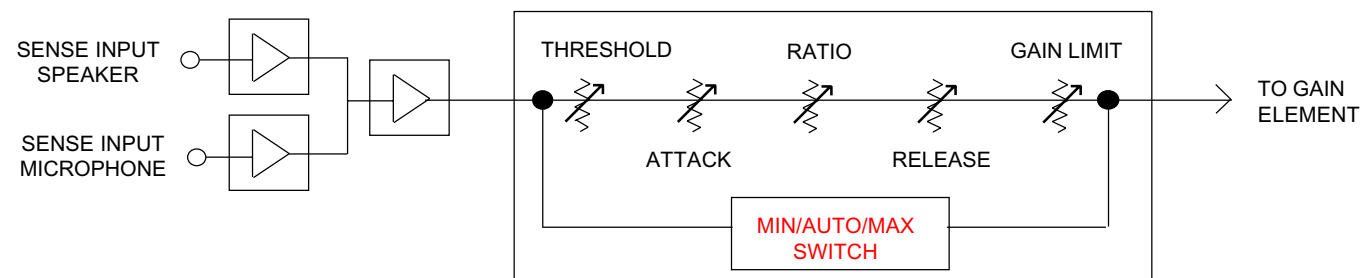
AUTOMATIC GAIN SECTION

The automatic gain section of the 65306 allows the unit to listen to ambient noise conditions in the area being served by the public address system, and to adjust the system output level to compensate for variations. The unit can use a microphone, or speaker(s), or both, for sensing the ambient noise.

Control of the automatic gain section is accomplished with the THRESHOLD pot (at what ambient noise level the unit starts to add gain), the RATIO pot (at what rate the unit adds gain, in relation to ambient noise changes), and the LIMIT switch (determines how much gain the automatic gain section will add).

The three main controls allow custom tailoring of the operation of the 65306, to fit all installation requirements. The RATIO and LIMIT pots prevent run-away gain, as happens with some other products. The automatic gain section also incorporates factory adjusted attack and release times. These times may be field adjusted, if a very fast response time is required (i.e.- automobile racetracks, etc.).

The Model 65306 automatic gain section also incorporates a MIN/AUTO/MAX switch, to allow testing of the operational parameters after the set-up has been completed



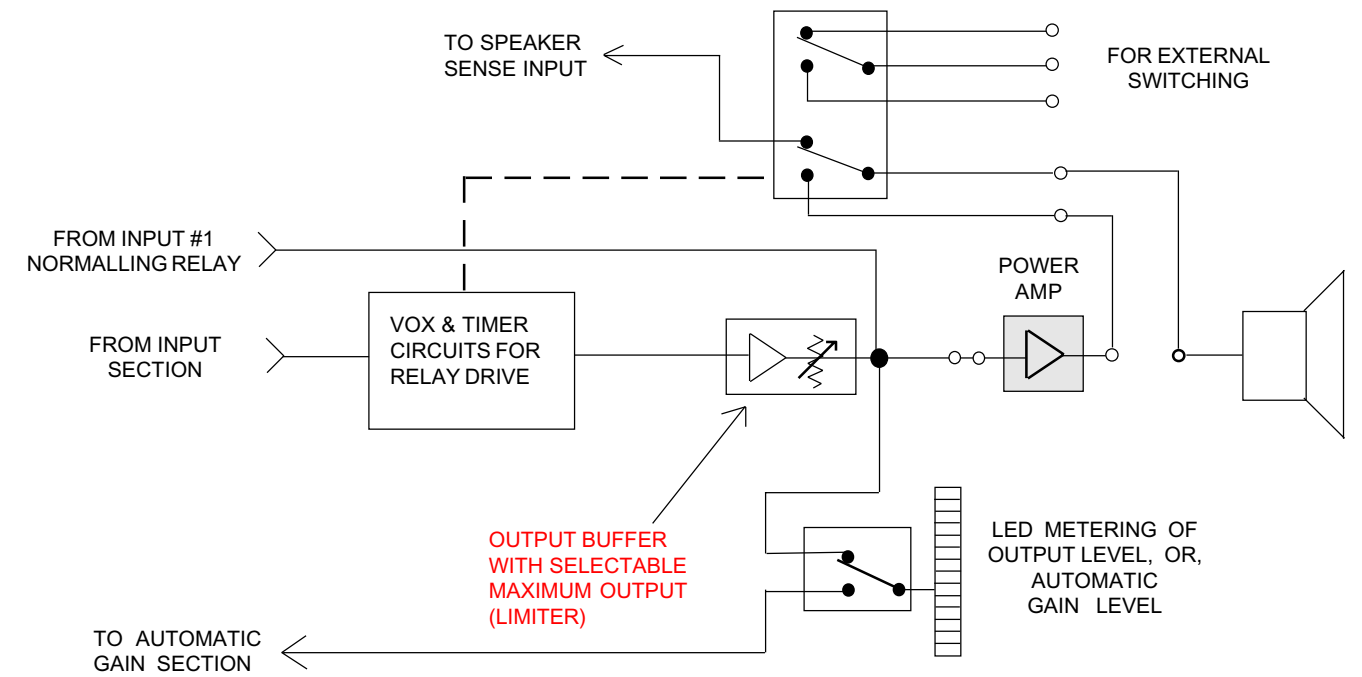
OUTPUT SECTION

The output section of the 65306 consists of a VOX and timer circuit, followed by an audio compression circuit, followed by a peak limiter circuit.

The VOX and timer circuit senses any audio arriving from the input mixing buss, and activates the relay that controls the sensing speaker connections. When audio arrives at the VOX circuit, the relay will disconnect the speaker(s) from the units sensing input, and connect them to the power amplifier output. In this way, the speaker(s) can serve as both a sensing device, and public address speaker(s). This feature is not usable with BGM.

The compression circuit processes the audio input signals, to reduce the dynamic range. This feature helps prevent some pages from being too low, or too loud. All incoming audio signals will exit the 65306 at a much more uniform level.

The OUTPUT LIMIT switch allows the user to determine the maximum output level that will be allowed. This feature prevents overload of the power amplifiers and system speakers. Regardless of the input levels, or automatic gain section settings, the output level will not exceed the desired maximum level.



Setting up the Model 65306 is as easy as setting up a small audio mixer.

First, set the MIN/AUTO/MAX switch to MIN position. Then apply the background music to the background music input, select a PRE/POST setting for the PRE/POST switch, and adjust the input level control to achieve the desired output level.

Second, while letting the background music play, apply each page input signal to the appropriate input, and adjust the input level control to achieve the desired output level. When the page input signal is applied, the background music will automatically mute. Repeat this step for each of the page inputs to be used. If only one page input is to be used, apply this signal to page input number 3. If more than one page input is to be used, apply input signals in sequence to hear the priority function operate.

Next, set the OUTPUT LIMIT switch to the desired maximum output level. Turn the MIN/AUTO/MAX switch to the MAX position. Repeat a page on any of the inputs, and turn the AUTO GAIN limit switch to a position that allows the output level to reach the desired level for a noisy period. Usually the 9dB or 12dB position is desirable.

Now turn the MIN/AUTO/MAX switch to the AUTO position. Turn the THRESHOLD knob to the 12:00 position. The unit is now set-up. Fine tuning of the AMBICON II may be achieved by turning the THRESHOLD knob slightly up or down, and turning the RATIO knob down. These fine tune adjustments may not be needed in most applications, but they are available to allow the Model 65306 to perform perfectly in all manner of installations.