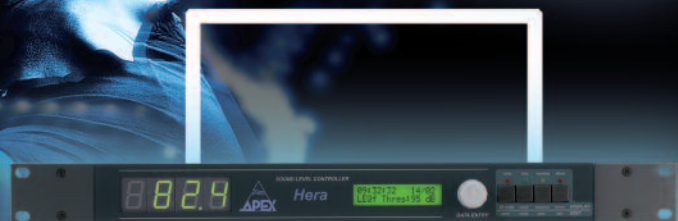


**SL-SERIES** SOUND LEVEL LIMITER



Sound  
level limiter  
& controller  
for pubs,  
discos,  
live music...





# SL-SERIES SOUND LEVEL LIMITER

## SOUND LEVEL COMPLAINTS ?

Do your neighbours often **complain about excessive sound levels** and you should really do something about it ? Changing the venue's acoustics is not an option ? Then what is ? You've told your DJ's many times not to play too loud, but in the heat of the night volumes seem to rise automatically. They often **break your sound system** ? Does your local authority enforce a restrictive policy on sound levels and are their visits costing you fines on a regular basis ?

## SL-SERIES IS A SET OF TOOLS FOR CONTROL OF SOUND LEVELS

The Apex SL-series is a set of 3 tools to **protect hearing, neighbours, the environment and equipment against excessive sound levels** without changing the quality of the sound programme. The Argos is a straightforward **transparent sound level limiter**. If a more sophisticated system is required with for example **track keeping of SPL levels**, unauthorised system tampering or if your local authorities urge you to install a **cut-off device**, then the addition of the Hera is required. Leto is an optional **deported sound level display** to Hera.

## ARGOS THE BEST SOUNDING LEVEL LIMITER

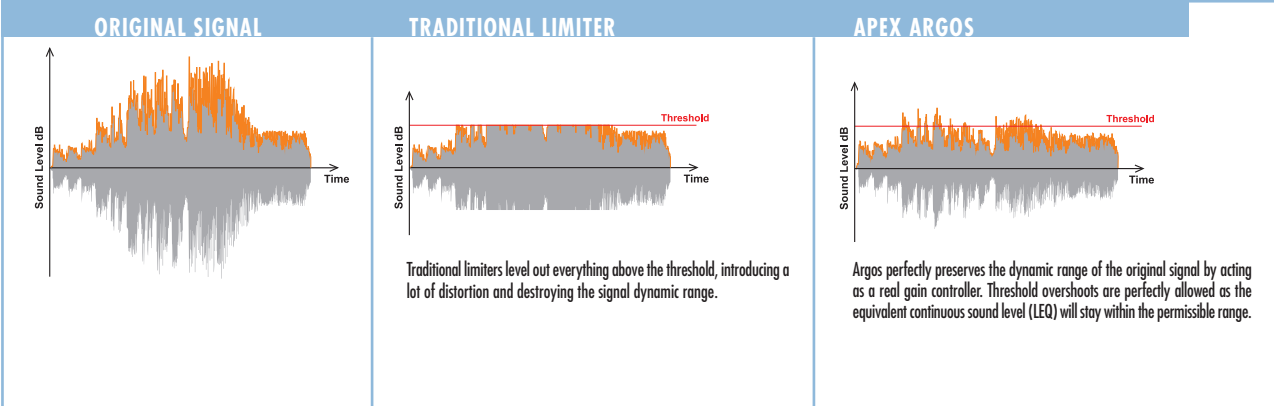
You may need to apply to **local regulations** in matters of sound levels, or you simply wish to have a **responsible attitude** towards your customers' hearing, or you wish to protect your speaker system from abuse, or maybe you wish all of these combined.

Anyhow you'd like to offer your customers nice, good sounding music without damaging their hearing. **The Apex Argos sound level limiter is regularly stated by the press and by our customers as the most natural sounding and smoothest level limiter available.** Argos will prevent your sound system from producing excessive sound levels, while keeping a clean sound at all times.

Argos' **unique servo-loop circuitry** will preserve the whole **audio signal quality** and – very important – the entire **dynamic range**. Its **unique silence detector** makes it an indispensable tool for live music performance as well as interrupted recorded music and it will prevent pumping artefact after a pause period.

Setting up the Argos in fast mode and connecting it directly to your power amplifiers output, right in parallel with the speakers, will **protect your sound system** against dangerous DJs, hard-rockers and extensive repair bills.

**USE THE ARGOS TOGETHER WITH THE APEX HERA, THEY WILL BE YOUR NEIGHBOURS' DREAM TEAM !**





## HERA THE ULTIMATE SOUND LEVEL MANAGEMENT

The Apex Hera is a **microprocessor controlled sound level controller**. Hera can be used either as a separate unit or combined with the Apex Argos.

Hera will not only **log the average (Leq) and peak RMS sound level pressure** over a time period, but Hera will also **detect and log the attempts of system cheating** (for example disconnection of the microphone). The logs can be easily consulted by any user directly from the front panel or retrieved on a computer and printed out.

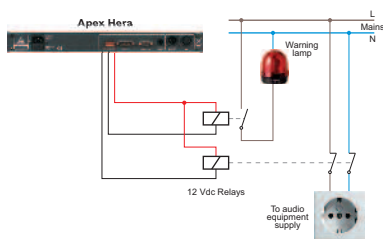
Hera also offers **two logic outputs** that may be used to drive **relays for signalisation or mains cut-off** if a certain threshold is being exceeded. This **threshold value may be scheduled** to allow for different sound levels at set times.

All settings are **pin code protected** and can easily be set from the devices' front panel.

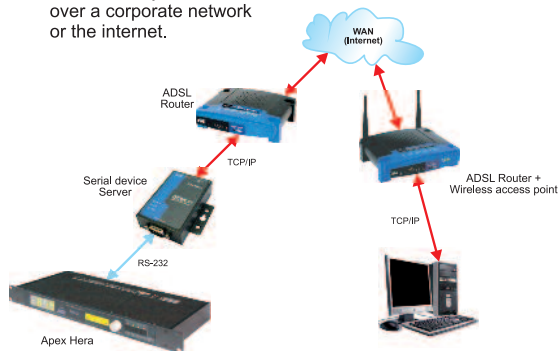
Hera also offers an automatic calibration function for departed **microphone distance compensation**. This is particularly useful in most venues, since the measurement microphones should be placed out of reach.

**COMBINED WITH THE ARGOS, UNITS WILL ACT AS THE ULTIMATE SOUND LEVEL CONTROLLER WITH MEASUREMENT AND LOGGING FUNCTION.**

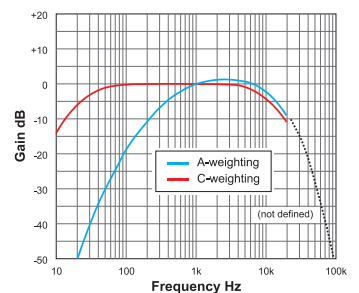
Hera logic outputs:  
example of use



Hera memory read-out  
over a corporate network  
or the internet.



A- & C- frequency  
weighting filters of  
both Argos and Hera



## LETO LARGE SOUND LEVEL DISPLAY

Optionally you can connect the Apex Leto large deported display to the Hera so that the audience, band or DJ may have visual sight on the sound pressure levels at any time.

# SL-SERIES SOUND LEVEL LIMITER

## Applications

- Fixed installations: bars, discos, concert venues, ...
- On the road: mobile DJ, live concert,...
- Sound or broadcast studios to limit sound levels on monitoring systems

## ARGOS THE BEST SOUNDING LEVEL LIMITER

### Features



- Best sounding limiter
- Easily accessible
- Use of multiple reference sources:
  - External reference microphone (provided)
  - Line level input of the Argos
  - Power amplifier speaker output
- Can be used in combination with the Apex Hera to assure precise sound level management or cut-off function
- Can be used for recorded and live music
- 2 bargraphs for clear indication of Level and Gain Reduction
- Level settings are hidden and can be sealed by authorities
- Selectable A- or C- frequency weighting filters

### Specifications

#### AUDIO SPECIFICATIONS

- Frequency response 10Hz – 40 kHz +/- 0,2 dB
- THD + Noise @ 1 kHz, 0 dBm input level < 0,1 % typical <= 0,02 %
- Input impedance 10 kOhm
- Output impedance 100 Ohm
- Speaker input impedance 20 kOhm
- Maximum input-output level balanced inputs-outputs + 24 dBm
- Noise linear unbalanced
 

22 Hz – 22 kHz	-95 dBm
A-weighted	-102 dBm
- Noise linear balanced
 

22 Hz – 22 kHz	-89 dBm
A-weighted	-95 dBm
- A-filter accuracy 27 Hz – 20 kHz +/- 1,2 dB
- Pink noise output level -20dBm typical
- Pink noise flatness 10 Hz – 30 kHz +/- 1 dB
- Maximum gain reduction 60 dB
- Adjustment range
 

line level setting	-46 dBm till +6 dBm
Mic dBA setting	60 till 112 dBA
Speaker	12,5 mW till 1800 W / 8 ohm

#### GENERAL

- Supply voltage 220 to 240 Vac - 50 / 60 Hz
- Current consumption 6W at 230 Vac
- Safety requirements IEC-65
- Dimensions 482 x 44 x 165 mm (19 inches / 1U)
- Weight 2,5 kg

Specifications may be changed without prior notice.



## HERA THE ULTIMATE SOUND LEVEL MANAGEMENT

### Features



- The largest measurement range on the market, from 55 dB SPL to 120 dB SPL
- Log of the average (Leq) and peak sound level over user adjustable time period
- Memory of the last 14 days, in case of a log taken every 15 minutes
- Readout of measurement and event log through internet or a corporate network
- Separate Level Display on front panel
- Possibility to schedule different threshold at set times
- Contacts to trigger warning, mains shut down, ...
- Factory calibrated for perfect accuracy
- Selectable A- or C- frequency weighting filters

### Specifications

#### MEASURING

- Range 55dB ~ 120 dB
- A-filter accuracy 27 Hz – 20 kHz +/- 1,2 dB

#### LOGIC OUTPUTS

- Open-collector outputs with flyback diodes
- Connections 1: GND, 2: Cut-off output, 3: Warning output, 4: +12 Vdc
- Max current per outputs 60 mA

#### GENERAL

- Supply voltage 90 to 240 Vac - 50 / 60 Hz
- Current consumption 30W at 230 Vac
- Safety requirements IEC-65
- Dimensions 482 x 44 x 230 mm (19 inches / 1U)
- Weight 2,96 kg

Specifications may be changed without prior notice.



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