

ET150, 300 & 450 Hearing Loop Amplifiers



Description

The ET150, 300 & 450 form the professional range of Contacta's *Easy T*[™] series of hearing loop amplifiers are designed to provide studio quality sound in the loop system. The amplifiers have 3 inputs on XLR: 2 dedicated microphones and one line input. User selectable phantom powering is available for the microphone inputs, enabled via of a rear panel switch. The inputs are individually mixed before passing to the compressor limiter, to prevent loop overload while compensating for varying microphone usage.

All controls are recessed to prevent unauthorized access. Visual indication is provided for compression level, output current, loop status and power. A loop current monitor socket allows headphones to be used to monitor the actual loop current. An audio output (post compressor) is provided for recording, with a slave audio in to allow cascading. A loop OK voltage is available to illuminate a sign showing correct loop operation. The units are all 1ru (1.75") high and a 19" rack mounting kit is available.

Choosing the right unit

In order to remove the "magic" from loop amplifier specification, Contacta recommends loop amplifiers are specified by this: maximum square area and length of the shortest side. These areas relate to loops fitted at floor or ceiling (8ft) height and provide even loop coverage.

For example, the ET150 will cover a square room 40ft per side (1600ft²), however the same amplifier will also cover a rectangular room 30ft by 65ft (2150ft²). In this example the ET150 is rated at 1600ft² square area and 30ft for the shortest side. The shortest side rating is valid for distances up to twice the shortest side. For example, the ET450 is rated at 65ft shortest side, so the other side of the rectangle can be a maximum of 130ft (giving a coverage of 8600ft²). If the loop is above 8ft in height, then 20% should be subtracted from the shortest length for every additional foot in height the loop is (to a maximum of 13ft).

These values do not take into account additional losses present in some building constructions. If you are in any doubt, always lay a temporary loop. It is always wise to allow 20% spare capacity when specifying a loop amplifier, just to cover the unknown element.

Features

- Up to 8600ft² Coverage
- 3 Inputs on XLR
- Phantom Power
- Current Mode Output
- Loop Monitoring
- Soft Start
- Compressor
- Compression Meter
- Full Protection System
- Protected Mixer & Drive Controls
- Power Indication
- High Peak Current Capability



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Amplifier	Square Area	Shortest Side	Maximum Area
ET150	1600ft ²	30ft	2150ft ²
ET300	3200ft ²	50ft	4800ft ²
ET450	4800ft ²	65ft	8600ft ²

All information is believed to be correct at the time of printing; however, Contacta Inc reserve the right to change any specification as part of our program of continuous improvement.

Technical Specification

Inputs

Audio inputs	3 (2 Mic, 1 Line)
Type	XLR
Phantom	Selectable, 12V 5mA
Sensitivity	-50dBV Microphone -10dBV Line Level

Mains Input

Voltage	115V~50/60 Hz		
	ET150	ET300	ET450
Power	100VA Max	180VA Max	300VA Max
Internal fuse	2 at 3.15A	2 at 5A	2 at 6.3A
Main Internal Fuse	1.25A	2.5A	3.15A

Indication & Controls

LED indicators	gain reduction, loop current, power, loop integrity and protection mode.
User Controls	input mixer and current drive.

Audio Processing

Compressor	Variable ratio 1:1 to limit 20:1.
Attack	10mS
Release	Automatic from 500mS to 1500mS
Dynamic Range	>60dB
THD	<0.25%

Output Stage

Type	Current Mode		
Loop impedance	0.1Ω to 1Ω		
	ET150	ET300	ET450
Peak Current	>9A peak	>12A peak	>15A peak
125mS burst	>6A peak	>8A peak	>10A peak
RMS Current	2A @ 1KHz	3A @ 1KHz	4A @ 1KHz
Protection	DC, Thermal, Short circuit, soft start.		

Dimensions

Extents	Height	1.75in
	Width	17in (free standing) 19in with Rack kit
	Depth	6.5in

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Installation

The unit should be installed in a convenient place, ideally as close to the area to be covered as possible. Make sure the loop cable (a single turn loop) is installed properly (see note 1 below) and the microphone(s) are located as close to the area(s) where the sound is to be picked up from (see note 2 below).

The input mixer controls can now be adjusted so that the gain reduction meter just moves to 12dB on very loud speech. The output drive control can now be adjusted to give the correct field strength in the area to be covered. This is best done with a loop field strength meter during installation, or a loop listening device (good practice is to supply a loop listening device to all installations to allow the responsible person a means to test the loop periodically and record correct operation in a log booklet).

Notes:

1. If there is any doubt about the construction of the building, it is always best to lay a temporary loop in the approximate position the final loop will occupy. Apply a pink noise signal to the driver and using your ET-FSM, check the signal loss across the loop. Reduce the loop width until the signal level is within a ± 3 dB range. This will determine the optimal width of the loop. Many new buildings contain aluminium or steel in the flooring. Loops placed on the floor near this aluminium or steel will fail to operate satisfactorily, unless the loop width is reduced.

2. Microphone cables must be run separately from the loop cable. Under no circumstances should the cables be tied together for any distance, as this will cause magnetic feedback and the unit will not perform correctly. Good practice is to twist the loop feeder cable together between the start and end of the loop and the amplifier. Or, use a quad core cable and tie the opposite cores together.

Products & Ordering Information

- ET150** 1ru free standing, 3 XLR inputs (2 mic, 1 line) hearing loop amplifier, with loop monitor, loop current indication, compressor limiter, mixer and output drive recessed controls. Covers a square room 40ft per side (1600ft²) up to a rectangular room 30ft by 65ft (2150ft²). Output current >5.44A
- ET300** 1ru free standing, 3 XLR inputs (2 mic, 1 line) hearing loop amplifier, with loop monitor, loop current indication, compressor limiter, mixer and output drive recessed controls. Covers a square room 56.6ft per side (3200ft²) up to a rectangular room 50ft by 96ft (4800ft²). Output current >7.7A
- ET450** 1ru free standing, 3 XLR inputs (2 mic, 1 line) hearing loop amplifier, with loop monitor, loop current indication, compressor limiter, mixer and output drive recessed controls. Covers a square room 69.5ft per side (4800ft²) up to a rectangular room 65ft by 132ft (8600ft²). Output current >9.5A
- ET-RM** Pair of 1ru rack mount ears for the ET150, ET300, and ET450 allowing easy installation into standard 19" rack cabinets.
- ET-LR** Induction loop receiver, allowing anyone to listen to the loop using standard walkman type headphones
- ET-FSM** Induction loop field strength meter, allowing accurate measurement of loop operation, as well as background noise assessment.