

LIC AUDIO 

INSTALLATION INSTRUCTIONS  
INDUCTION LOOP AMPLIFIER

# XL-2000

## INSTALLATION INSTRUCTIONS FOR INDUCTION LOOP AMPLIFIER XL-2000.

Before you begin the installation please read these instructions and you will have an excellent functioning loop system when it is ready to use.

1. Make sure that a grounded mains socket, rated for 230V (240V) is available. The mains fuse must be at least 10A.

**N.B. The amplifier is switchable between 115 and 230V AC/50 or 60 Hz!**

2. If the listening area is less than 200m<sup>2</sup> it is suitable to install the loop wire at floor level or 2,5 m above.
  - When you are installing in areas larger than 200m<sup>2</sup> the distance between loop level and listening level has to be calculated. *See Appendix 1:1.*
  - The recommendation is to use a wire with cable areas of 2 x 2,5 or 1 x 4,0mm<sup>2</sup>. *See Appendix 1:2.*
  - Avoid installing loop wire and signal wire in parallel close to each other. You also have to avoid loudspeaker cables.
  - Make sure that the **POWER** switch on front of the amplifier is turned off, and that the mains cord is disconnected when you are connecting the loop wire.
3. Connect the Loop wire to the speakon connector **LOOP OUTPUT** at rear of the amplifier. *See Fig. 1.*  
*N.B.! When using 2-turn loop it is suitable to make the intermediate connection externally.*
4. Connect the programme source to the balanced XLR-input, **LINE INPUT**, at rear of the XL-2000. *See fig. 2.*
  - Connect to mains an turn **POWER** on and adjust **LINE INPUT** so that the LED **PEAK** tend to light up phasing the programme peaks.

**N.B.** If this LED, **PEAK** is lit constantly there is a risk you will have distortion in the preamplifier stages. All **INPUT** potentiometers (**LINE IN**, **BASS**, **TREBLE**) will have an influence on the **PEAK** indicator:

5. Adjust the Loop Output Current with **LEVEL (OUTPUT)**. Check the Magnetic field by using a Magnetic Field Strength Meter. For 'normal' speech the field strength shall be 400mA/m. Long-time average value shall be 100mA/m in the frequency range 100 - 5000Hz.

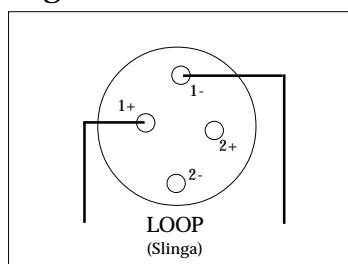
XL-2000 is supplied with an Output Limiter adjustable by an internal jumper **JPI**. This function is inactive when the amplifier is delivered.

**BASS** and **TREBLE** can be adjusted to compensate the frequency response in the loop, normally they should be in the 'MID' position.

The sound quality can also be monitored by phones via the **PHONES** connector.

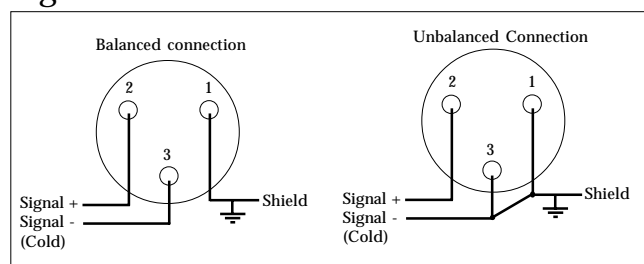
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Fig. 1



Speak On - output

Fig. 2



XLR - input (LINE)

## Appendix 1:1

To achieve an 80% to 90% coverage, the "relative listening height" (Z) should be about 0,2. To illustrate this, assume that the loop is to be installed in a room measuring 20 x 25 m = 500m<sup>2</sup> (A). It is required that at least 80% of this area should be an acceptable listening area. When the loop is installed at the floor level, the listening height (X) is about 1,2m.

The distance between the listening height and the floor level will therefore be given by the formula:

$$X = \frac{Z \times \sqrt{A}}{2} = \frac{0,2 \times \sqrt{500}}{2} = 2,25m$$

In other words, the loop should be installed 3.45m (1,2 + 2,25) above the floor to give the maximum area of coverage.

## Appendix 1:2

### *To determine the dimension of the loop wire*

Depending on the results of field measurements and the listening results, choose either a 1-turn loop or a 2-turn loop.

For areas - 500m<sup>2</sup> – use 2 x 2,5mm<sup>2</sup> wire

For areas 500 - 2000m<sup>2</sup> – use 2 x 2,5 or 1 x 4,0mm<sup>2</sup> wire

## Technical specification:

### **MAINS**

**Power supply:** 230/115V AC 50/60Hz  
**Coverage:** theoretically - 2000m<sup>2</sup>

**Frequency response:** 100 - 5000Hz, EQ in mid position

### **INPUT**

**Line:** 130mV - 1,6V/47K $\Omega$ ,  
3-pin XLR connector  
**Peak indicator sens.:** 0,5Vrms

**Output limiter:** Gain reduction:10dB  
Attack time: 1sec (approx.)  
Decay time: 1sec (approx.)

### **EQUALIZER**

**Bass:**  $\pm$ 10dB @ 180Hz  
**Treble:**  $\pm$ 12dB @ 2kHz

**LED output display:** Loop current output 3 - 55 A(p-p)

### **OUTPUT**

**Loop:** NL4 Speak-On connector  
**Max output voltage:** 35V(rms)/125ms/18 $\Omega$   
**Max output current:** 20A(rms),[55A(p-p)]/1 $\Omega$ /125ms  
**Phones:** 0 - 0,5V/18 $\Omega$ , adjustable  
monitor output

**Distortion:** 1% (1 $\Omega$  load, 1kHz)

**Standby:** 360s

**Dimensions:** 483x133x410mm (WxHxD),19",  
3U

**Weight:** 15,0 kg

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