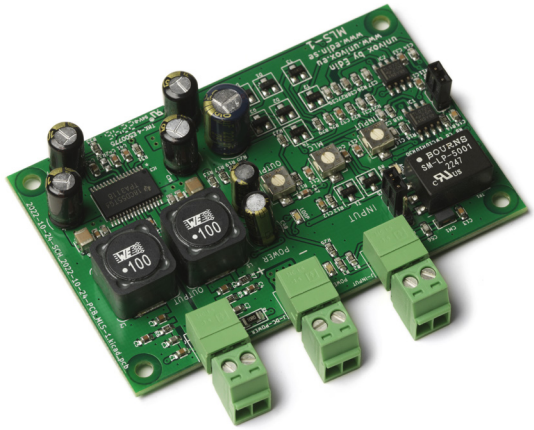
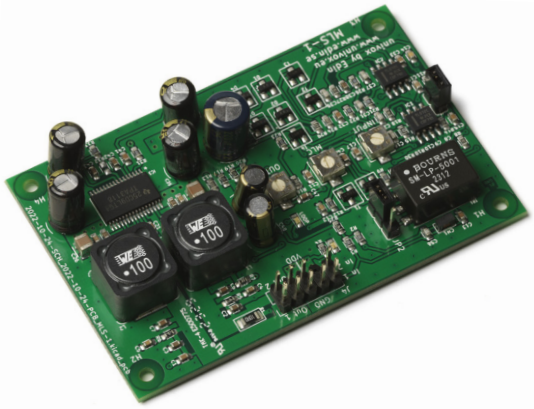
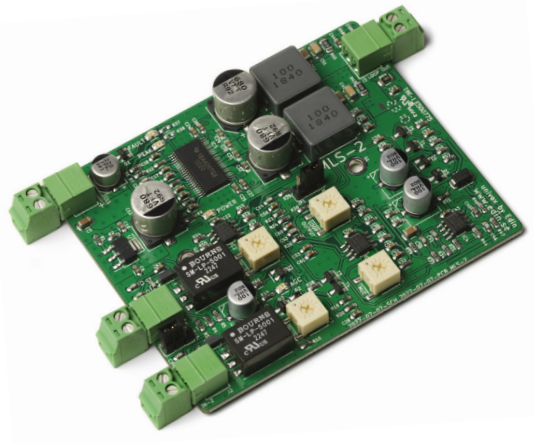
Univox® MLS-1, MLS-1P & MLS-2

Compact hearing loop amplifiers

User manual







Assistive listening since 1965

univox

Introduction

Dear Customer,

We would like to take this opportunity to say thank you for choosing Univox and for your support in our ongoing mission to bring affordable, high-quality products to market, something we've been doing since 1965. We hope that this system will serve you well for many years to come.

As part of Univox's long-term goals, we continuously strive to innovate new products and improve existing ones. We always keep you, the customer and end-user, in mind when designing new products, and we work tirelessly for accessibility and equality. Everyone should hear everything!

To get in contact with your local distributor, please visit univox.eu. If you'd rather get in touch with us directly, you can do so at:

Phone: **+46 8 767 18 18**
Email: **support@edin.se**

Thank you, and enjoy the experience of perfect audio!

Sincerely,

Mattias Arrhenius, Managing Director, and the team at Univox

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Product introduction

Univox MLS-series offers a range of compact, high-performance hearing loop amplifier modules designed for a wide range of OEM applications, where a hearing loop solution is required.

Developed on the efficient class-D technology platform, Univox MLS-series is ideal for integration in systems requiring high energy efficiency and low heat generation.

MLS-series is well suited small-area communication systems, such as intercoms, emergency phones, information- and help points, kiosks etc. MLS-series is also an excellent option for loop installations in confined spaces like elevators. Equipped with a Univox' AGC function, MLS-series allows for simple connection to various input signal, ensuring flexibility across applications.

Univox MLS-series features Metal Loss Compensation (MLC) which enables fine tuning and compensation for metal loss and attenuation effects. A fully integrated, correctly installed MLS-series system complies with all the requirements of the IEC 60118-4 standard.

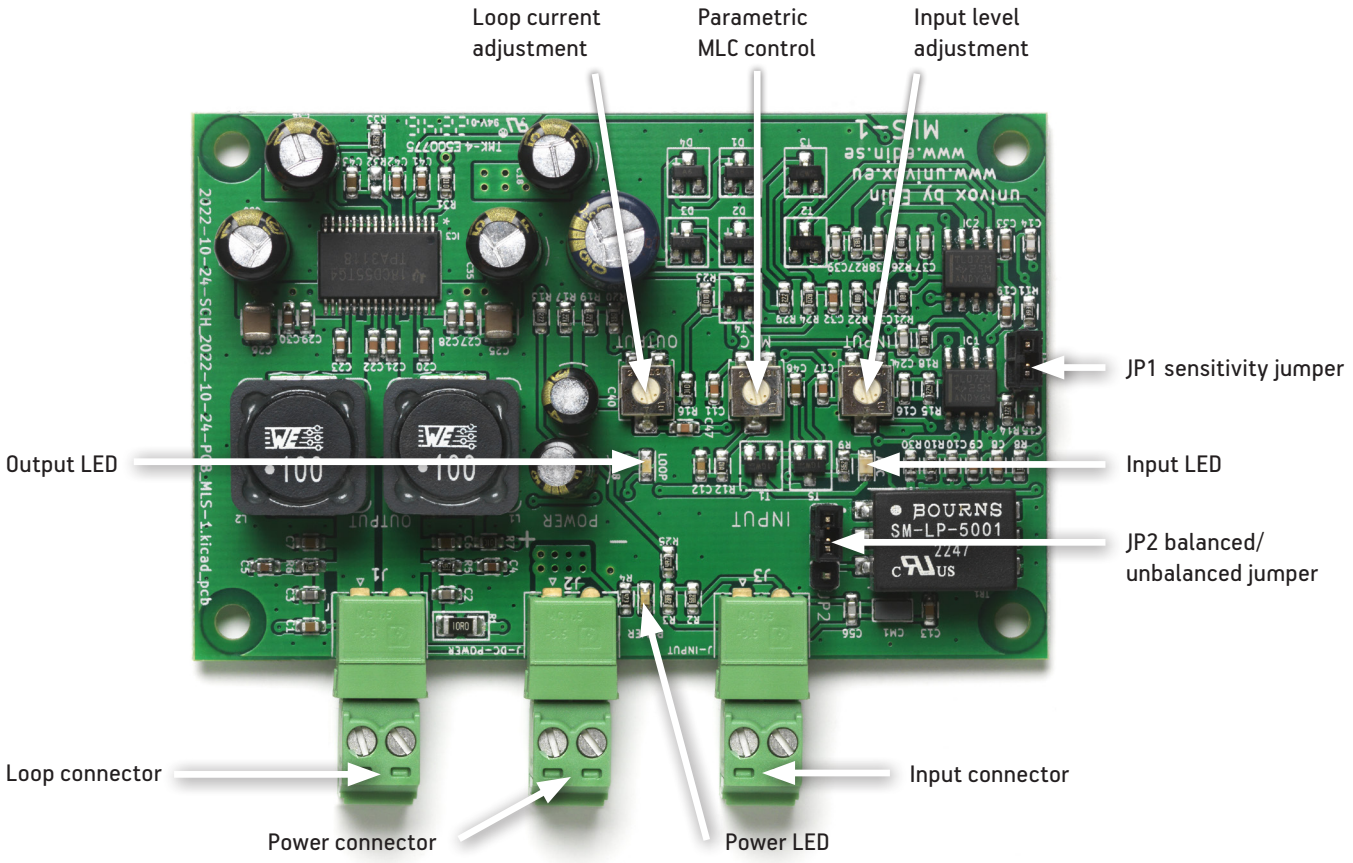
INSTALLATION SETUP

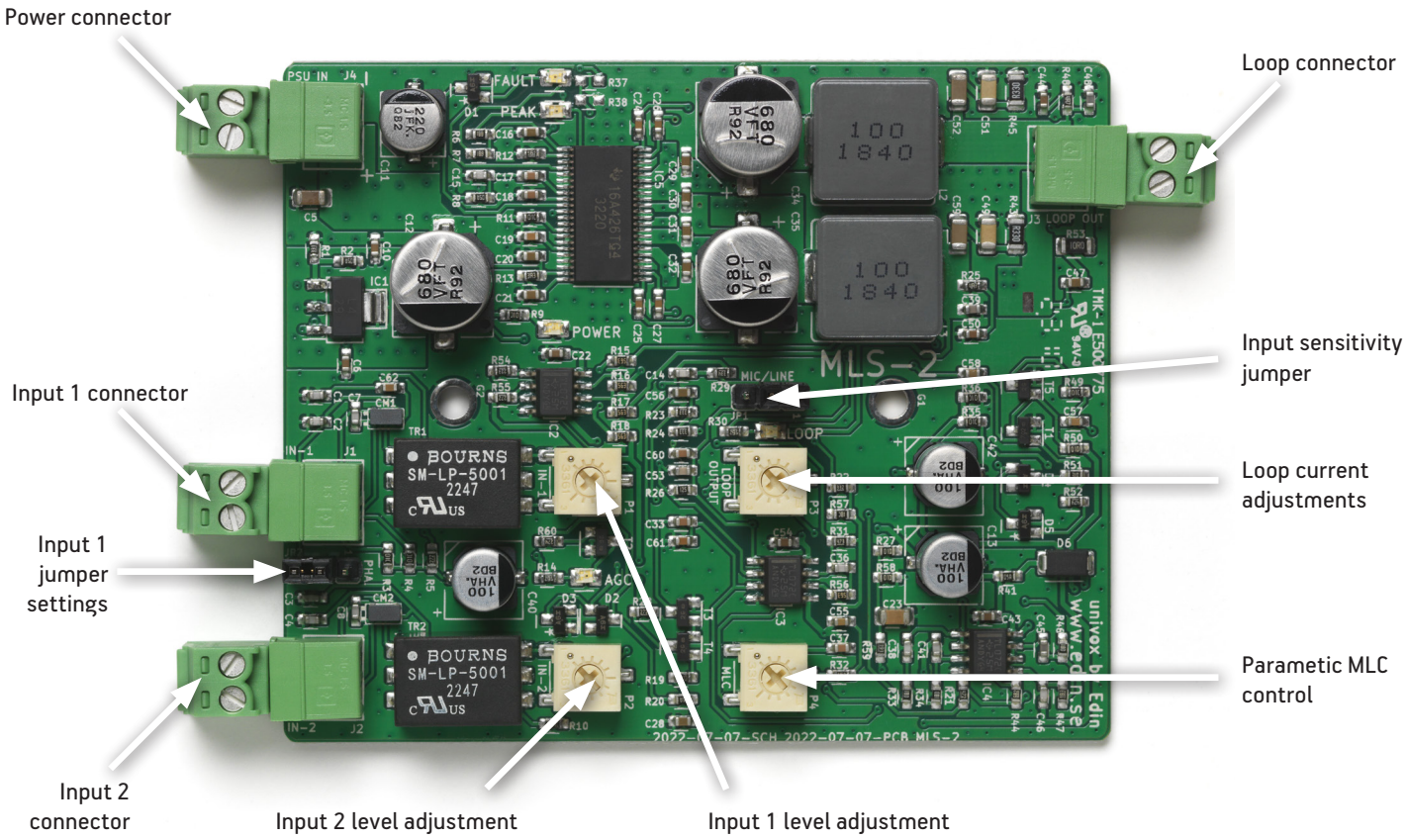
Units from the MLS-series should be mounted on a flat and stable surface, and use:

- 4xM3 screws for MLS-1/1P
- 2xM3 screws for MLS-2

Or insulated adhesive pads can be used.

PRODUCT OVERVIEW





1. Set all level controls to minimum setting (counterclockwise).
2. Connect a loop wire (R>1.0Ω) to the Loop connector. If wiring between the loop figuration and the driver is used, the wire should not exceed 10 meters (not including the number of turns) and should be paired or twisted.
3. Connect a suitable input signal source to the Input connector. See section for jumper settings connecting different kinds of audio signals based on the unit & model.
4. Connect DC power supply to the Power connector (see connection diagram).
   Observe the power polarity! Verify the power LED indication.
5. Adjust the input signal until the input LED flickers occasionally, indicating program peaks.
6. Adjust the loop current output level to achieve a filed strength compliant with IEC60118-4 requirements. The output LED indicates that the amplifier is transmitting correctly. Use a Field Strength Meter to verify the field strength level within defined distance, at the reference position and direction appropriate for the application.

Note: In smaller systems the listening level will vary as a function of distance (as for a loudspeaker). Check the sound quality (clear sound with no distortion) with the loop receiver, Univox® Listener.

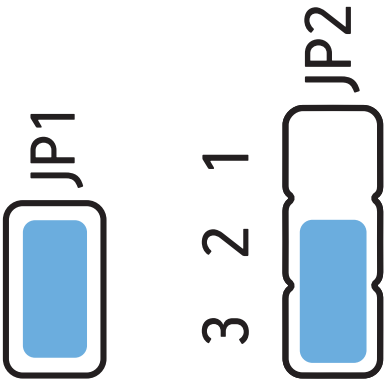
INPUT JUMPER SETTINGS

MLS-series comes two Jumper settings (JP1 & JP2) for various input options and if you need to use a microphone. Follow instructions below depending on the model.

SETTINGS FOR MLS-1

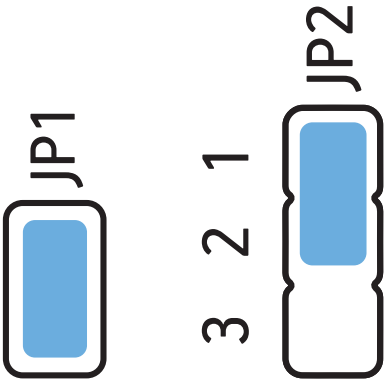
Input Line sensitivity, balanced

- Input sensitivity jumper JP1 should be ON (sensitivity set to min 85 mVrms to 1.5 Vrms)
- Balanced/Unbalanced jumper JP2 set to pin 1-2 (bottom and mid pin)
- Connect the signal cable to Input connector. Leave GND/screen open, not connected



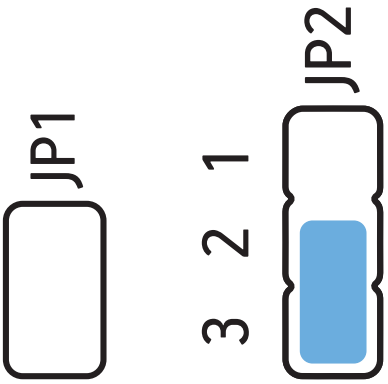
Input Line sensitivity, unbalanced

- Input sensitivity jumper JP1 should be ON (sensitivity set to min 85 mVrms to 1.5 Vrms)
- Balanced/Unbalanced jumper JP2 set to pin 2-3 (top and mid pin)
- Connect the signal cable to Input connector, signal line and GND



Input Mic sensitivity, +9 V phantom ON

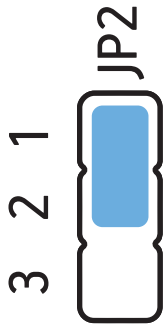
- Input sensitivity jumper JP1 should be OFF (removed)
- Sensitivity level is now set to min 15 mVrms to 1.5 Vrms. Phantom is ON
- Set JP2 to pin 1-2 for balanced or 2-3 for unbalanced based on the microphone



SETTINGS FOR MLS-2

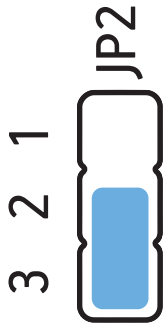
Input 1 Line sensitivity, balanced, phantom OFF

- Set input sensitivity JP1 to pin 1-2 (top and mid pin)
- Set JP2 to pin 1-2 (top and mid pin)



Input 1 Mic sensitivity, unbalanced, phantom ON

- Set input sensitivity JP1 (2) to pin 2-3 (mid and bottom pin)
- Set JP2 to pin 2-3 (mid and bottom pin)



(Phantom power=12-30 VDC (=PSU level))

MLC

The metal loss control function enables system frequency response correction in installations where the signal strength is strongly influenced by the surrounding metal.

The frequency response can be fine-tuned by adjusting the MLC potentiometer, compensating for the effects of different metal types and configurations.

LOOP SPECIFICATION

Recommended loop resistance for the highest system efficiency is approximately 1-1.5Ω. Calculate the required loop wire length (l) by using the formula: l=(A*R)/0.0172, (0,0172 is copper resistivity in Ωmm2/m; l is wire length (m); A is wire cross-sectional area (mm2) and R is wire resistance [Ω]).

Install the wire around the coverage area, by adjusting the number of loop turns, (depending on application, area size and the wire type) and ensuring that the loop resistance is maintained within 1-1.5Ω.

TYPICAL ELEVATOR APPLICATION

Recommended installation for an elevator size 2 x 1.3m, single round copper wire loop placed in the ceiling or on the top of the elevator.

Wire [mm^2]	Z [0hm]	No turns	Tot wire length [m]
0.32	1.2	3	19.8
0.75	1.1	4	26.3

Note: Since the field strength is directly proportional to the number of turns, 7-turn loop generates approximately half the field strength, i.e. –6 dB, versus 13-turn loop.

Technical Data MLS-1, MLS-1P & MLS-2

	MLS-1	MLS-1P	MLS-2
Power Supply			
External Power Supply:	6-24 VDC / 12-50 VA		6-30VDC/12-50VA
Recommended Power Supply:	12-24 VDC / 15-50 VA		15-30V/25-50VA
Idle current:	36mA		50mA
Idle power @ 12VDC:	0.3W		0.5W
Connectors	Phoenix Contact	10 Pin Headers	Phoenix Contact
Trimmers		MLC Input Output	
Input Mic-phantom / Line *(MLS-1P has only Line)*			
Type:	Differential/Balanced		Galvanically isolated > 1kV
Mic Input:	13 mVrms		13 mVrms; AGC/knee
Line Input:	85 mVrms – 7Vrms		250mVrms - 7Vrms
Input Impedenace:	2 kOhm		2 kOhm
Output			
Max Volt Out:	48Vpp		60Vpp
Mx Current:	6 Arms		6 Arms
Max Power:	50W		75W
Loop Load			
Workable Load range:	0-30 Ohm		
Recommended:	0.35-1.5 Ohm		
Dimensions	78 x 53 x 16 mm		105 x 70 x 16 mm
Weight	35g		50g
Environment			
Temp range:	-40 to 75°C		
PCB classification	94L		
Part.no	204000	204000P	204002

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