

# Univox<sup>®</sup> TLS-2

## Transportation Loop System



### Features

- Extremely high ability to overcome metal loss
- High output current, 10-30 A RMS (power supply related)
- High frequency gain potentiometer on PCB (metal loss correction)
- Insensitive to vibrations (complies with EN 50155 and EN 61373)
- Insensitive to extreme temperatures (complies with EN 50155)
- Adapted for limited installation spaces
- 20-50 VDC power connection
- Balanced and isolated inputs (with and without transformer)
- Rugged Dip-switch input and output level settings on PCB for streamline installations
- Isolated opto-coupler outputs for input and output signal check (diagnostic test)

### Univox<sup>®</sup> TLS-2 is a custom developed loop amplifier, designed for public transport vehicles

Univox<sup>®</sup> TLS-2 has been developed to drive hearing loops in vehicles that are completely or partially enclosed by metal, like trains, trams, buses and ships.

Univox<sup>®</sup> TLS-2 is a constant current amplifier with very high output current up to 30 A RMS. This overrides the strong damping effect conductive materials has on magnetic transmission. A metal loss correction is also available for high frequency slope corrections.

Univox<sup>®</sup> TLS-2 is strongly resistant to mechanical vibrations that occur in all types of vehicles and it complies with the shock resistance requirements in the EN 50155 and EN 61373 standards. All larger capacitors are glued onto the coated dust resistant PCB.

Univox<sup>®</sup> TLS-2 has a rugged efficient cooling system without fan, for long-time trouble free function, that makes the amplifier highly insensitive to heat. It complies with the environmental temperature requirements in the EN 50155 standard (-25 to +70°C). Capacitors are temperature rated -40°C to +105°C. All relevant EMC demands are met (EN 50121-3-2) as TLS-2 has no high frequency switching components. A closed metal casing and professional connectors make Univox<sup>®</sup> TLS-2 rated IP40. The case and signal ground are isolated through a 200 V capacitor which could be removed for higher isolation rates.

The amplifier is designed to fit and work in cramped spaces, as required in these types of environments. All the connectors and indicators are placed on one side of the amplifier to facilitate installation, service and control. The amplifier can be fastened by using the screw holes on the case flanges.

There are two balanced inputs (XLR and WAGO 769 series), and both power supply, loop output and diagnostic system are connected to the amplifier using high quality WAGO connectors. Input and output levels are set by rugged dip-switches on the PCB where also the metal loss correction potentiometer is located.

TLS-2 can easily be connected to a computer host's diagnostic system through the opto-coupler isolated outputs for control of input and/or output signals.

# Univox® TLS-2



## Technical data

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### Power Supply

DC Voltage 20-50 VDC. The connection power supply must be fused by a 10 A slow fuse.

### Input

Connectors: (XLR and WAGO 769 series). Internal switchable input settings:

1. 5 mV-5 V (0,6 kOhm-10 kOhm)
2. 100 V balanced line system
3. Electret microphone input with built-in Phantom voltage

### Input controlled AGC

Input controlled Dual Action AGC with crest factor dependant timings. LED indicator in front panel for correct input level setting.

### Loop Output

Gives 10-30 A RMS output depending on the supplied voltage and current. Potentiometer to increase high frequency gain (metal loss correction) is mounted on the PCB.

### Output controlled AGC

Time dependent output controlled AGC that will reduce the output level in case of self-oscillation and if the rms value during 1-3 seconds reaches the clipping level.

### Diagnostic output

Opto-coupler and external LED indicates loop transmission

### Mean time between failures, MTBF

4.6 million hours. Based on sales (more than 10,000 units, 2003-2011) from the professional loop systems range.

### Part No

213110 Univox® TLS-2, Transportation Loop System

Size: 290 (258 without flanges) x 170 x 87 mm (Width x Depth x Height)

Weight: 3 kg



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For additional information, please refer to User Guide/Installation Guide and CE Certificate which can be downloaded from [www.univox.eu](http://www.univox.eu). If required, spare part list or other technical documents can be ordered at [support@edin.se](mailto:support@edin.se).